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SPECIALIZED OIL JOURNALS

Published by

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The Oil Man's Calendar

SEPT.	
8–12	American Chemical Society, Atlantic City.
17–19	National Petroleum Association, Atlantic City.
OCT.	
2– 3	West Virginia Oil & Natural Gas Association, Clarksburg.
6– 9	National Safety Congress, Chicago.
9–11	Texas Mid-Continent Oil & Gas Association, Beaumont.
16–17	American Association of Petroleum Geologists, Pacific Section, Los Angeles.
16–18	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Dallas.
20–22	National Stripper Well Association, Tulsa.
20–22	Independent Petroleum Association of America, Tulsa
30–31	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Los Angeles.
31	California Natural Gasoline Association, Los Angeles.
NOV.	
2– 7	American Petroleum Institute, Annual Meeting, San Francisco.
DEC.	
3	New Mexico Oil & Gas Association, Artesia.
5	Oklahoma Stripper Well Association, Tulsa.

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Published every Monday. Single Copies 15 cents (Special Issues 50c). Subscription price: domestic and foreign, $2.00 a year; 2 years $3.00. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879. Subscription restricted to those engaged in the producing and pipe line branches of the oil industry or the manufacturing and distribution of oil field supplies. Advertising rates on application.

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The Changing Panorama

Sucker Rod Steel Needs Studied

Prompt action on OPM request by industry is commendable

The oil industry and manufacturers of sucker rods are to be commended upon their prompt action on the request which came from Washington last week that they get together and make an estimate of sucker rod requirements.

The meeting, called by the API, was held in Dallas Monday, attended by a representative group of oil producers, and manufacturers of about 98 percent of the annual sucker rod output.

Presided over by T. E. Swigart of Shell Pipe Line Company, the meeting developed information as to the possible output of sucker rods, dealt with the situation on present orders, and then the oil company representatives compiled an estimate of sucker rod requirements from now until the end of 1942.

This information will be forwarded to the proper authority in Washington and should be of material value in determining priorities on steel for sucker rods. At present a very large percentage of rods involve nickel or other alloys. Nickel is high up on the priority list, and OPM officials from time to time, in discussing priorities for sucker rod steel, have suggested that carbon steel be substituted for alloys. It was mentioned at the meeting that a change to carbon steel might not prove as simple as it sounds, because of the possibility, in many instances, of putting an undue strain on surface equipment installed to handle rods of smaller dimensions.

What this meeting has started should be undertaken, and probably will be, on other products which the industry will use. It is not a matter of great difficulty to make a reasonable estimate of requirements. Certainly the industry owes it to the public and to itself, to make all possible preparations in the matter of essential equipment, in order that the flow of oil not be diminshed.

Priorities a Weapon?

When Petroleum Coordinator Harold L. Ickes succeeded in getting an arrangement whereby all applications for priorities on oil equipment would be filed directly with him, and then forwarded with his recommendations to OPM and OPACS, he procured machinery that constitutes a powerful enforcement weapon in obtaining compliance with any decrees he may hand down—especially relative to production affairs.

That Ickes may be aware of this, and may possibly have plans for using his new weapon, may be interpreted from statements that have been made.

In the first place, Ickes some time ago stated he favored priorities for companies producing "with the least possible waste."

Secondly, the official announcement of the priority setup included this important paragraph:

"All applications for priority aid made by the petroleum industry for materials and supplies will be considered by the petroleum coordinator with regard to a broad general plan, now being worked out by the interested agencies, for the most effective use of essential materials to maintain supplies of petroleum products at necessary levels and for the production of petroleum products in such a manner that neither the defense needs of the present nor the public needs of the future will be impaired or prejudiced."

Perhaps producers will be required to follow certain conservation practices before they will have much success in getting priorities on casing and other equipment. These might even include well spacing or unitization. If this practice is followed, the first crack down probably will occur in Illinois.

Practical Obstacles Block Britain Gift

Situation has changed since generous idea first suggested

A few months ago we received as a visitor in our office an earnest, serious-faced man whose usually sober mien had been fired by an idea to help Britain. He was John Camp, independent operator of San Antonio, and his idea was that each operator in Texas make a contribution of one day's shut-in production of crude oil to England, as a gesture of good will to England's cause.

At that time there was no talk of a shortage of tankers. England was getting practically all of her oil from Iraq and Iran. The Lend-Lease bill was being talked about, but was not a law. As Mr. Camp pointed out, the day's production which would be solicited would be the production of a shut-down day, coming as he expressed it, "from the bottom of the barrel-oil which would not be produced for years, otherwise."

Details of how to handle the matter, from the standpoint of the producer, and the pipe-line company, as well as the royalty owner, had not been worked out. We had the feeling that difficulty might arise along this line, but Mr. Camp pointed out that the matter would be purely voluntary and under such conditions, much of the difficulty would be removed.

His idea was that such a contribution to Britain would be most heartening to our unofficial ally and that the gift would be a symbol to the Germans of the individual desire of individual Americans to help in the defeat of Naziism.

We have been accustomed to dealing with people who become sold on an idea, and believe that we can fairly determine whether sincerity or a desire for publicity is the motivating influence on a "movement." In the case of Mr. Camp, we felt certain, and do now,

that desire to aid England was his ruling passion and that personal aggrandizement did not enter his mind.

We mention this because in the heat of the arguments which have arisen, things have been said both by proponents and opponents of the idea, which might well have been left unsaid.

Camp asked if we would help with the idea. We told him that we were sympathetic with his desire to aid England, and that if the practical problems could be worked out, we would be for it.

New Developments

It was a considerable time later that we next saw Mr. Camp. By that time the lend-lease proposition had become law. American tankers were being transferred from coastwise service to Britain. Prospects of high taxes on oil men, to help pay for their share of American aid to England were not only in the offing, but were sure to be very large. Consequently, we did not feel that the proposition had the practical aspects it had when Camp first talked to us.

Now the matter has assumed considerable proportions in the minds of Texas operators. Many feel that they will be taking a heavy part in the aid to England, through taxes to support the lend-lease bill. There is an emphatic tanker shortage. England has changed from a policy of refining large amounts of crude oil, to a policy of importing refined products. Legal difficulties in the handling of the oil through pipe lines, which make carriers unwilling to run the oil, have come to light, difficulties which some pipe line people say are insurmountable. In effect, the picture the proposition now presents is an entirely different one than that which met the view a few months ago when the idea originated.

Commissioners Salder and Culberson of the Texas Railway Commission have embraced the idea. There has been a disposition on the part of some to accuse those who will not contribute their production, with lacking patriotism. Such an accusation is unwarranted, because even in the beginning, Mr. Camp realized that royalty difficulties might interfere with a company's giving **all** of a day's production. On the other hand, some have intimated that the movement is just a publicity stunt. We feel sure that it is not a publicity stunt, but that it was a generous idea which has run afoul of some very practical difficulties.

Any attempt to put pressure on operators to force them to give production is a serious mistake. The attitude of the railroad commission with reference to hearings on the matter smacks of dictatorial politics.

If some operators can and will give, without involving any legal entanglements or violation of the rights of others, we say that they should be given the cooperation of the commission in doing it. But pressure to give should have no place in this proposition. We do not believe that Mr. Camp, who fathered the idea, favors it, we do not believe that England would wish it, and application of such pressure can only result in recriminations and discord. Legally, it can not get to first base.

As the week closed it appeared that the movement would not go over because of the practical aspects of moving the oil. An additional indication that the movement will have little success is the decision of the Railroad Commission to postpone the scheduled ceremony for delivering the oil to Britain.

Censorship!

Two weeks ago censorship was applied by the Petroleum Coordinator's office on information relating to the transfer of additional tankers to Britain. On Thursday of this week Coordinator Ickes gave out a statement to the press to the effect that on Friday an American tanker loaded with aviation gasoline would sail from San Francisco for Vladivostock.

Reasons for applying the censorship on news regarding transfer of tankers to England was that publication of the news would "give aid to the enemy."

If publication of Ickes' statement about the tanker going to Russia doesn't give aid to a German raider, or a Japanese raider flying the German flag, we will be surprised. It probably would not be accurate or fair to say that the Secretary's press release was deliberate—we prefer to think that it is simply another case of going off half-cocked.

Gasoline Curfew Fiasco . . .

Gasoline curfew week, August 3 to 10, proved a resounding fiasco, thereby justifying the pessimism of Coordinator Ickes over the likelihood of American motorists curtailing their use through self-denial. Consumption as measured by bulk sales to filling stations and garages shot up instead of down during the week, sales by some large distributors in the area increasing by the following percentages:

Company 1, up 6 percent,
Company 2, up 9 percent,
Company 3, up 12 percent,
Company 4, up 12 percent,
Company 5, up 17 percent.

One thing the first week of the campaign did not do was reduce week-end travels to Eastern beaches by the hordes who regularly pour out of the cities during summer months. On Sunday, August 11, Coney Island had over 1,000,000 visitors. Rockaway Beach, also near New York, had a record crowd of over 1,000,000. Atlantic City had 550,000, the largest crowd in 10 years.

The nightly closing plan will continue, but probably will result only in the coordination organization studying a discouraging set of reports. As a last-minute effort to eliminate the need for compulsory rationing, the Automobile Club of New York and affiliated organizations are conducting a drive in New York state to cut gasoline consumption by voluntary action. Windshield stickers reading "I don't waste gas" are being distributed to drivers.

Apparently, the only alternative to self-denial for Eastern motorists will be for Ickes to swing his ace of clubs, "enforced rationing."

Pipe Scarcity . . .

The tightness of the line pipe supply situation is well illustrated by the difficulty being encountered in obtaining only 61 miles of 10-inch pipe for a system in Western Kansas that would increase the state's transportation facilities by 30,000 barrels daily.

That the situation is getting pretty serious was further indicated the past week when the pipe supply for the already under-construction Montreal - Portland line was placed on the A-1 priority list by OPM. This action was taken because delay in getting the necessary pipe was threatening to defer completion of the system.

All this indicates that the proposed construction of transcontinental systems exceeding 1000 miles in length may be delayed much longer than heretofore anticipated.

100 More Tankers for Britain Seen in Shortage Forecast

By L. J. LOGAN, Associate Editor

ALTHOUGH additional diversions of tankers are to be carried out secretly, for military reasons, it is evident that the government actually is taking into consideration the possibility or probability of relinquishing for war use as many as 100 more ships.

This conclusion has been reached through calculations, set forth below, which indicate that only the diversion of that many tankers would make necessary the drastic, one-third curtailment of East Coast consumption, which the government has asked for and warned against.

Only the relinquishment of 100 additional boats, over and above the original transfer of 50 into the shuttle service for Britain, would squeeze down the oil movement to the East Coast by one third when there is taken into account the numerous measures already taken or contemplated in compensation for the disturbances of the normal shipments to that area.

Would Cause Shortage

If the full 100 more ships are diverted, the East Coast shortage will amount to about 34.5 percent of indicated normal requirements during the fourth quarter of this year, it is indicated. But the deficiency will decrease to 30.6 percent in the first quarter of next year, in reflection of launchings of new tankers and completions of new pipe lines. And after the end of the first quarter, when the projected East Texas-New York-Philadelphia crude oil pipe line is completed, the situation will be greatly relieved overnight, with the putting into service of that overland transportation unit equivalent to 62 tankers, which would itself compensate for two thirds of the additional tankers given up.

There is some question, however, as to the rapidity with which additional tankers are to be supplied to Britain, and any postponement of transfers will of course relieve the East Coast shortage.

Unofficial reports indicate that immediate diversion of almost 50 tankers is planned; but some men of the industry hope that if the new transfers run as high as 100, a substantial number of them will be spread out over several months.

Because of the secrecy surrounding the plans for the additional diversions, it is possible to estimate the impending East Coast shortage only within a comparatively wide range of figures, by calculating the deficiency under each of several possible magnitudes of diversion.

The calculations are tailor-made insofar as the situation is to be affected by the original transfer of approximately 50 tankers, as the industry's fact-finding committee, following study of circumstances and possibilities, predicted for the Office of Production Management the deficiencies of tanker tonnage for supplying East Coast consumption requirements during the last two quarters of this year and the first quarter of next year.

The estimates of the committee were set forth in dead weight tonnage, but in terms of average tankers, the figures indicated the following prospective shortages of boats:

Period	Number of Tankers	Barrels Per Day	Percent of Total East Coast Demand
1941: 3rd Quarter.	30	123,000	8.8
1941: 4th Quarter.	64	253,000	15.0
1942: 1st Quarter.	55	216,000	12.5

These figures must be revised, however, as explained hereafter, to give consideration to remedial measures taken since the report was issued; and still further revisions will be necessary because of the impending additional transfers of tankers, as shown below in a table that sets forth the shortages that may be expected if the new

For these motorists on New York City's East River Drive, as well as for some 10,000,000 others in the East Coast district, gasoline ration cards apparently are due to become a necessity soon. The number of gallons that each car owner will be allowed to buy in a given period will depend on the number of additional American tankers turned over to Britain.
—Photo by Ewing Galloway, New York.

diversions total 30, 40, 50, 75, or 100 tankers, the actual number to be transferred not being definitely known.

Remedies Executed

Various measures have been taken to alleviate the scarcity of ships, and the committee took into account those which had been definitely executed or projected at the time of the issuance of the report in early June. The estimates reflected, for example, the emergency induced pipe-line movements of oil from the Southwest to the Philadelphia and New York areas by Gulf Oil Corporation and Standard Oil Company of New Jersey. They also gave consideration to scheduled launchings of new tankers. The estimates at the same time were based on expectations that total East Coast oil requirements would show substantial increases in 1941 and in 1942, an overall gain of 9.7 percent having been forecast for 1941 and one of 6.1 percent for 1942, with increases varying for the different products.

However, several additional remedies have been used, which the committee recommended but which it could not take into consideration in its calculations, as it had no assurance that they would be invoked. These have included particularly the heavier loading of boats, following enactment of special enabling legislation by Congress, through which a saving of the equivalent of about 12 tankers has been achieved; although it will not be safe to load boats quite as heavily when fall and winter bring rough seas. Transfer of several tankers from service between California and the East Coast to service between the Texas Gulf Coast and Atlantic seaboard has afforded a net increase in oil receipts in the latter district equivalent to the carrying capacity of about 5 tankers. The equivalent of about 6 tankers has been provided by more efficient routing of ship movements in the South and Central American trade. About 4 tankers have been saved by more effective use of barges, on the Mississippi and Ohio rivers, on Chespeake Bay, on the Hudson River, and along the Florida coast. In addition, the equivalent of several tankers has been provided by speeding up of loading and unloading of tankers, looping of pipe lines, installation of additional pumping equipment on existing pipe-line systems, and more extensive use of railway tank cars and tank trucks. Together, these remedial measures may be conservatively estimated as having afforded a total saving of at least 30 tankers since the fact-finding committee released its report.

No material additional relief is in prospect until late in the year, when the equivalent of about 3 tankers will be provided through completion of the nearly-finished gasoline pipe line from Port St. Joe, Florida, to Chattanooga and Knoxville and when 3 tankers will be released through completion of the Portland - Montreal crude - oil pipe line. These lines will not materially affect the tanker situation in the final quarter of 1941 but will bring up to 36 the total number of tankers not counted by the fact-finding committee that will be available for serving the East Coast in the first quarter of 1942.

If the committee's estimates are revised in accordance with these subsequent savings in tanker tonnage, the shortages for the third and fourth quarters of 1941 will be reduced by 30 tankers each and that for the first quarter of 1942 by 36 tankers. The indicated shortages then, after all the achieved and scheduled savings of tonnage, but before the impending additional tanker diversions, are as follows:

Period	Number of Tankers	Barrels Per Day	Percent of Total East Coast Demand
1941: 3rd Quarter.	0	0	0
1941: 4th Quarter.	34	136,000	8.8
1942: 1st Quarter.	19	76,000	4.9

(It likely will not be until the first quarter of 1942 that relief will be provided through the large gasoline line now being built by Plantation Pipe Line Company from Baton Rouge, Louisiana, to Greensboro, North Carolina, which will release 10 tankers, and not until mid-1942 before the huge crude-oil pipe line from East Texas to Philadelphia and New York, which will soon be started and which will be equivalent to 62 tankers can be completed.)

The above revised figures on indicated shortages of tanker tonnage make it appear that there would not have been during the present third quarter any actual under-movement of oils to the East Coast in the absence of additional diversions of tankers, in consequence of the numerous effective moves made to compensate for the original relinquishment of 50 ships.

The calculations are substantiated, moreover, in so far as the first half of the third quarter of 1941 is concerned; for there has not been so far any material lagging of the movement of oils to the East Coast, as evidenced by changes in stocks of crude oil and major refined products in that region.

During the five weeks from June 28 to August 2 this year, there was an aggregate net increase of 3,890,000 barrels in East Coast stocks of light fuel oil, heavy fuel oil, gasoline, and crude oil, as compared with an increase of 4,379,000 barrels in the corresponding period last year. Seasonal build-up of East Coast storage during the recent five weeks was short of that for the like period last year only by a total of 489,000 barrels or an average of 14,000 barrels daily.

Shown in tabular form, these changes in stocks have been as indicated herewith, the figures on refined products being based on weekly reports of the American Petroleum Institute and those on crude oil being based on Bureau of Mines statistics.

Changes in East Coast Stocks
(Barrels)

Product	1940: June 29-August 3	1941: June 28-August 2
Gasoline	— 822,000	—1,450,000
Gas Oil and Distillate	+3,581,000	+3,648,000
Residual Fuel Oil	+1,451,000	+1,749,000
Crude Oil	+ 169,000	— 57,000
Total 3 Principal Products and Crude	+4,379,000	+3,890,000

In its report, the fact-finding committee emphasized that the supplying of the East Coast was not simply a matter of moving oils from the Gulf Coast with American tankers but a more extensive operation in which oils were also imported from South America and Mexico, partly in American boats but partly in Norwegian, Panamanian, and other foreign vessels, some of which were controlled by the British. In the first quarter of this year, the net dependence of the United States upon foreign tonnage for supplying its total consumption requirements was equivalent to 44 tankers.

In the committee's calculations of indicated shortages of tonnage and also in the revised estimates presented herewith, in the light of compensating moves, it has been assumed that this net amount of foreign tonnage would continue available for movement of import requirements over the period considered.

Additional Tanker Diversion

However, there is no guarantee that the foreign tonnage actually

will remain available, the supply of those boats being dependent on the world tonnage situation and those under British control being subject to withdrawal to meet British requirements. The committee stated in this connection that the possibility of such withdrawals by the British might affect the meeting of United States consumption requirements as seriously as further requisitioning of American tonnage for shuttle movement of British-bought oils up the coast to Canada.

The present plans for turning over more American boats to Britain are perhaps vague as well as secret, as rumors on the number of tankers to be transferred have ranged from 30 to 100. Furthermore, as pointed out by the fact-finding committee, additional boats may be lost from the servicing of the East Coast by British withdrawals of tankers now engaged in the American import service.

(The previously mentioned unofficial report that nearly 50 more ships would be diverted to British use immediately indicated that two thirds of them actually would be Norwegian tankers taken out of the East Coast import service and that the other one third would be American flag vessels taken out of the domestic, coastwise service.)

Shortage Indications

Shortages that would exist in the supplying of the East Coast upon diversion of different numbers of additional tankers to British use are indicated herewith.

Indicated Shortages of Tankers for Supplying East Coast That Would Result from Additional Diversions

Situation and Period	Number of Tankers Short	Barrels Per Day Short	Percent of Total East Coast Demand
If 30 More Tankers Taken:			
1941: 4th Quarter	64	256,000	16.4
1942: 1st Quarter	49	196,000	12.6
If 40 More Tankers Taken:			
1941: 4th Quarter	74	296,000	19.1
1942: 1st Quarter	59	236,000	15.2
If 50 More Tankers Taken:			
1941 4th Quarter	84	336,000	21.7
1942: 1st Quarter	69	276,000	17.7
If 75 More Tankers Taken:			
1941: 4th Quarter	109	436,000	28.1
1942: 1st Quarter	94	376,000	24.2
If 100 More Tankers Taken:			
1941: 4th Quarter	134	536,000	34.5
1942: 1st Quarter	119	476,000	30.6

In the light of these calculations, it is indicated that the government actually is taking into consideration the possibility of relinquishing for war use as many as 100 additional tankers. For it has been asking for and warning against a one-third curtailment of East Coast consumption, which apparently would be necessary only in the event of the diversion of 100 more tankers.

Auto Output Decline May Not Be Great

Optimism may be required to believe that the war will fail materially to interfere with the use of automobiles and trucks in the United States. There has been so much talk of gasoline shortage and curtailment of automobile production that the question naturally arises as to how greatly those factors will reduce the number of vehicles on the roads.

Facts and figures may be assembled to indicate that there may not occur actually any substantial or protracted curtailment of the use of motor vehicles in this country.

Despite assigning of tankers to Britain and the prospective necessity of supplying more, a look ahead into 1942 gives promise of virtual solution next year of the problem of keeping the East Coast supplied with petroleum.

Likewise, despite the proposed 50 percent reduction of automobile production in the immediate future and talk of a possible elimination entirely of passenger car production, there is no certainty that any sharp curtailment of factory output actually will occur, in view of the necessity status that the automobile has assumed in the United States, and in view of the far-reaching effect that the industry's operations have on the national economy. For continuance of the country as the world's greatest industrial nation, continued heavy use of automobiles and trucks is essential.

Most Travel Essential

The Automobile Manufacturers' Association recently calculated that 55 percent of all passenger miles traveled in 1940 were for necessity use, that is, for purposes connected with earning a livelihood or for closely related economic pursuits. The association also uncovered these facts: (1) half of all cars are used to take people to and from work; (2) six out of seven cars are used for family shopping; (3) nine out of every 100 farm passenger cars are used regularly or occasionally for hauling market products; (4) one out of every 5 cars hauls children to school and home again. A survey of the use of trucks indicated that those vehicles were used to haul the following percentages of vital commodities: 27 percent of the butter transported, 39 percent of eggs, 65 percent of live poultry, 40 percent of fruits and vegetables, 62 percent of cattle, 61 percent of calves, 68 percent of hogs, 29 percent of sheep and lambs, 50 percent of horses and mules.

Replacements High

Nearly 2,500,000 new automobiles and trucks must be made each year merely to replace the worn-out vehicles that are being scrapped annually, while normally there is a steady increase in the number of cars in use.

In the depression decade of the 1930's, sales of new automobiles averaged 2,807,000 a year, and 2,388,000 of those were required to replace vehicles scrapped annually.

In 1940 approximately 3,700,000 passenger cars were manufactured, and in the first half of 1941, nearly 2,500,000 were made.

Considerable doubt is arising as to whether automobile production actually will be reduced to any important extent by the government to facilitate national defense. It is contended by some men of the industry that disturbances to business and employment from horizontal production curtailment would be too great for such action to be pressed by government authorities. Drastic curtailment would affect not only the large manufacturing concerns but also many parts and materials manufacturers, dealers' organizations throughout the country, and wage earners all the way from factory worker to dealer's employe. It is conceded that shortage of materials may interfere with automobile production, but substitutes will be found and used extensively in resourceful efforts of manufacturers to take advantage of existing demand.

Washington Roundup

Ten percent East Coast gasoline curtailment ordered . . . Growing Congressional criticism of Ickes climaxed by introduction of bill to put oil control under Congress and oil probe suggestion . . . Plans for big pipe line are given Ickes

By B. F. LINZ, Washington Correspondent

A WEEK of steadily mounting activity in Washington, which included developments that indicated "stormy weather" for coordination efforts, was climaxed Friday night by the issue of orders by Leon Henderson, OPACS administrator, for an immediate 10 percent cut in deliveries of gasoline by suppliers in New England, New York, Pennsylvania, New Jersey, Delaware, Maryland, District of Columbia, Virginia, West Virginia, North and South Carolina and Florida east of the Apalachicola River.

In his order, issued on the petition of Coordinator Ickes, Henderson disclosed that the reduction program is "intended as an interim measure pending the development of a further plan for allocating the distribution and consumption of motor fuel," indicating definitely that his action will not eliminate direct rationing, probably to be announced after Labor Day.

The reduction, for which Ickes told the Americans to "blame Hitler," came on the heels of a move in Congress to lift that official out of the oil-control picture, and as the coordinator prepared to leave for a brief vacation in the Far Northwest where, he said, he was going into a "seclusion, from which, however, he is expected to emerge once or twice to talk on power questions and perhaps on the Pacific Coast oil situation."

As he prepared to reach for his hat, the coordinator spoke darkly of the "drastic" action which was so shortly to come, admitting that his curfew on filling stations had boomeranged. But before he left the capital, apparently having found some ground for the criticisms that have been voiced that England continues to maintain her world oil trade while calling on America for tankers, Ickes dispatched a personal representative to London, possibly to talk "turkey" there to officials who permit the continued commercial use of tankers while an important section of this country faces slow oil starvation.

The tempo of activities in the coordinator's office kept up steadily during the week, opening with a meeting of the chairmen of the regional committees and culminating in a frontal congressional attack designed to take control of the industry out of the President's hands.

Preliminary plans for the new Texas-New York pipe line reached the coordinator during the week, and numerous conferences were held, but nothing concrete was possible of accomplishment in the absence of a proclamation by the President under the Cole bill.

A similar proclamation also was awaited by Plantation Pipe Line Company, which appealed for aid to overcome the impass created by the refusal of Georgia railroads to permit the crossing of their lines.

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Each supplier of motor fuel in the affected area be required to keep for inspection for not less than one year complete and accurate records of all deliveries.

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Washington Roundup

Ten percent East Coast gasoline curtailment ordered . . . Growing Congressional criticism of Ickes climaxed by introduction of bill to put oil control under Congress and oil probe suggestion . . . Plans for big pipe line are given Ickes

By B. F. LINZ, Washington Correspondent

A WEEK of steadily mounting activity in Washington, which included developments that indicated "stormy weather" for coordination efforts, was climaxed Friday night by the issue of orders by Leon Henderson, OPACS administrator, for an immediate 10 percent cut in deliveries of gasoline by suppliers in New England, New York, Pennsylvania, New Jersey, Delaware, Maryland, District of Columbia, Virginia, West Virginia, North and South Carolina and Florida east of the Apalachicola River.

In his order, issued on the petition of Coordinator Ickes, Henderson disclosed that the reduction program is "intended as an interim measure pending the development of a further plan for allocating the distribution and consumption of motor fuel," indicating definitely that his action will not eliminate direct rationing, probably to be announced after Labor Day.

The reduction, for which Ickes told the Americans to "blame Hitler," came on the heels of a move in Congress to lift that official out of the oil-control picture, and as the coordinator prepared to leave for a brief vacation in the Far Northwest where, he said, he was going into a "seclusion, from which, however, he is expected to emerge once or twice to talk on power questions and perhaps on the Pacific Coast oil situation."

As he prepared to reach for his hat, the coordinator spoke darkly of the "drastic" action which was so shortly to come, admitting that his curfew on filling stations had boomeranged. But before he left the capital, apparently having found some ground for the criticisms that have been voiced that England continues to maintain her world oil trade while calling on America for tankers, Ickes dispatched a personal representative to London, possibly to talk "turkey" there to officials who permit the continued commercial use of tankers while an important section of this country faces slow oil starvation.

The tempo of activities in the coordinator's office kept up steadily during the week, opening with a meeting of the chairmen of the regional committees and culminating in a frontal congressional attack designed to take control of the industry out of the President's hands.

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To make recommendations and suggestions:

(A) To any department, establishment, corporation or other agency of the United States or any officer thereof;

(B) To any agency representing any state or any combination of states with respect to the production and conservation of petroleum and petroleum products, and

(C) To persons engaged in the production, distribution or sale of petroleum and petroleum products as to any action deemed necessary or desirable in order to insure the maintenance of a ready and adequate supply of petroleum and petroleum products for military and civilian needs.

Whenever he deems it essential in order to conserve the supply of petroleum or petroleum products or to insure the availability of petroleum or petroleum products for essential uses, in the interest of national defense or to prevent burdens upon or disruption of interstate commerce, the coordinator shall have the power to:

(1) Issue license to distributors of petroleum or petroleum products as a prerequisite to the distribution for sale by retail dealers of petroleum or petroleum products;

(2) Revoke any licenses so issued, and

(3) Limit or otherwise control, by means of priorities, rationing or other appropriate means or methods, the use of petroleum or petroleum products.

The coordinator is empowered to prescribe, amend and rescind such regulations as may be necessary to carry out the provisions of the legislation, and may exercise any of the powers or authority conferred upon him through such department agency or officer as he shall direct.

While the measure sets forth only the duties and responsibilities of the coordinator, it was seen likely that its enactment would be followed by a transfer to the new agency of the petroleum conservation division of the Interior Department, and the Federal Tender Board set up under the Connally Act, and possibly some activities of the Bureau of Mines, particularly those related to the monthly forecast and production reports.

Probe of Oil Situation?

The suggestion that Congress "might well" look into the oil situation was made in the Senate August 14 by Senator Francis Maloney (D., Conn.).

Evidencing the rising tide of criticism over the situation, which many have felt should have been foreseen and guarded against a year ago, when the defense program was started and it became evident that the demand for oil, steel, aluminum, silk and other products would reach unprecedented proportions, the Senator's suggestion, while not likely to be acted upon in the near future, coincided largely with the views of many members from the Eastern states.

"At the moment," he told the Senate, "I am especially alarmed at the possible effects of an oil shortage in the northeast. I realize that this approaching scarcity is caused by a deficiency in the transportation systems—but I am far from sure that it is wise to dispose of a large part of our facilities of transportation at the risk of a serious disruption of business — and sometimes vital defense business — in an important industrial area. People engaged in the oil business, who have been successful over years, are threatened with the loss of their business and savings.

"I have a great respect for the Secretary of the Interior, who is now designated as petroleum coordinator, and I think that I appreciate as much as anyone the conscientiousness with which he has approached his administrative duties, and the success which he has enjoyed. Sometimes I feel that he is given too much to do — and sometimes I fear that in his conscientious effort he is inclined to be dramatic.

"This is not intended as a criticism, because I realize that it is oftentimes necessary, in the effort to stimulate serious thinking in the minds of men, to stir them by a dramatization of the question at hand. I feel sure that he is giving

SHAKE-OUTS
From The News

The planned $80,000,000 national defense pipe line may boost crude-oil production in Kansas, already running at peak levels as a result of increased demand created by inability to move Gulf Coast petroleum to the Atlantic Seaboard because of tanker shortage, by 75,000 barrels daily, according to Arnold Jones, member of Kansas Corporation Commission.

»

Shell Oil Company has awarded contracts for construction of its third toluene plant, to be built at Wood River, Illinois, and will be completed in about a year. It will have an annual output of 4,000,000 gallons. The company's two other toluene plants are at Houston, one in operation and the other building. Annual toluene output will be 8,000,000 gallons, enough to make 80,000,000 pounds of explosives, when all three plants are completed.

»

In a move to provide a means for discussing current problems confronting fuel-oil jobbers, distributors and consumers as a result of national defense efforts, representatives of fuel oil associations from Maine to Florida last week organized the Atlantic Coast Oil Association Conference. Wylie Butler, former Standard Oil Company of New Jersey executive, was elected permanent chairman.

Two 75,000-barrel Japanese tankers loaded passengers and supplies and filed clearance papers at San Pedro, California, preparatory to starting home without the oil cargoes for which they came.

»

The United States Maritime Commission August 11 opened bids for construction of 16 small tankers of about 1830 tons each and a capacity of 12,800 barrels. They will have an over-all length of 220 feet, a beam of 37 feet, and a depth of 14½ feet. Speed will be 10½ knots.

»

Russian war reports assert that the Rumanian oil pipe line extending across the Danube has been severed and that railroad communication in the region has been completely disrupted by blowing up a bridge at Gerna Voda, 90 miles east of Bucharest.

»

By the time the international situation is cleared up, womenfolk probably won't be disturbed about the lack of Japanese silk from the United States market. There are many new kinds of synthetic silk in the offing, including one, known as vinyon, that is being made from natural gas.

most careful consideration to the possible dangers confronting the northeastern part of the country in connection with this oil situation. I know that he will husband the transportation facilities as best he can.

"But perhaps an investigation of the situation will be necessary to supplement his efforts. Perhaps an investigation will be necessary in connection with this serious problem. I know that the Senate understands how serious is this shortage of raw materials and transportation facilities. I feel sure, because members do so understand, that they will be anxious to give early and careful consideration to the measure which I am today submitting."

Criticize Oil Men

In a new attack upon the oil men serving the government in its emergency, Senator Guy M. Gillette (Iowa), charged in the Congressional Record August 15 that 134 of the 205 persons named to regional committees by Coordinator Ickes on July 19 "are persons individually who either have been found to be violators of the federal anti-trust laws or are now being sued as violators of those laws."

Despite this, Gillette asserted, the advice of these men "will be effective if not controlling in determining the disposition of suits now pending against some of these very men."

The senator listed about 25 of the men, citing their "records" in government suits without further comment.

Tankers For Russia

The first American tanker to haul oil for Russia left Los Angeles August 14 with a 95,000-barrel load of 95 octane aviation gasoline, following by less than two weeks a merchant ship load of gasoline in drums.

The tanker was one of four to be used to supply the Soviet with gasoline. It sailed for Vladivostok under the American flag, despite warnings by Japan that it would be considered as an unfriendly gesture, and Administration officials indicated that all the tankers would retain their American registry, for the present at least, and that Vladivostok has not been designated by the Washington Government as a belligerent port.

The first shipment to Vladivostok, by a Russian merchant ship, was aviation gasoline in drums which were in stock on the Pacific Coast, and the priority for steel for 10,000 drums sought by the oil administration—which was granted last week—was for the purpose of replacing those used for the cargo.

No tankers will be taken from the Gulf-Atlantic Coast route for Russian supplies, it was announced August 14 by Coordinator Ickes.

Aviation Gasoline Needs

The coordinator revealed that he has been working on plans for expansion of aviation gasoline production, but had not perfected any details. It was expected, however, that the expansion would be financed in part by the industry and in part by the Government, he said.

During the week, however, reports were received in Washington that several companies were planning to go in for aviation-gasoline production in a big way, as a result of the suggestion that output be expanded by 25 percent.

It was said that these companies were prepared to spend approximately $10,000,000 in the construction of new facilities at various points throughout the country.

As in the case of other facilities which are being developed, priorities will be asked of the OPM for any material or equipment which will be required for new aviation gasoline plants.

Committee Meeting

Chairmen of the 25 regional committees were told this week that it is up to the industry to make the government's oil program effective.

Meeting with officials of the oil administration to define the position of the several committees under the program, the chairmen were told by Coordinator Ickes that they should take the initiative in working out means by which an adequate supply will be made available for all "foreseeable" needs.

Almost immediately, they were told by Deputy Coordinator Davies that supplies of steel and other materials will not be sufficient to satisfy the normal requirements of the industry, and that it will have to meet its problems under that additional handicap.

Administration officials laid before the group their plans for dealing with the situation in the East, including the proposed new pipe lines and the filling station "curfew," but told the chairmen that one important subject which must be taken up immediately is that of insuring an adequate supply of aviation gasoline, not only for our own needs but for those of Britain and Russia as well.

Also discussed was the possibility of making use of all available tank cars to offset the deficiency in ocean transportation, and that question, as well as others outlined during the general conference, was taken up later by the chairmen of the functional committees—for production, refining, transportation and marketing—in meetings with the division directors in charge of those subjects for the coordinator.

Compact Passed

Extension of the Interstate Oil Compact was assured August 15, when the Senate passed the measure. It will be ready for approval by President Roosevelt when he returns to Washington.

London Representative

Edward W. Pauly of the Petrol Corporation, California, left Washington August 14 to go to London as Coordinator Ickes' personal representative in the British capital, with instructions to make a thorough study of the oil situation "in all of its phases."

The decision to send a man to England was reached in the course of studies undertaken several weeks ago by the oil administration to determine whether Britain was making the most efficient war use of her tankers.

The inquiry was precipitated by charges at the Capitol and elsewhere that while England was beseeching the United States to give her tankers, she was continuing to use her own ships to carry commerical consignments of oil to various parts of the world.

The coordinator refused to say just what angles of the situation were to be most closely studied by Pauly, but indicated that his dispatch to London had been a result of the study of Britain's tanker operations, to some extent giving color to the charge that England

was still maintaining her commercial activities despite her grave need for military oil supplies.

Gasoline Tax Hike

Possibilities that the Senate Finance Committee might increase the Federal gasoline tax in an effort to make up the more than $300,000,000 cut from the 1941 revenue bill when the House rejected the proposal to require joint income returns from husbands and wives, brought to the hearings before that committee considerable opposition, particularly from the trucking industry.

Treasury estimates had indicated that as much as $260,000,000 could be raised by an additional one cent a gallon on gasoline, and such a levy was suggested by representatives of the Investment Bankers Association testifying at the hearings.

On the other hand, the representative of the American Trucking Association declared that increased tax would be a hardship on the truckers and that it would mean as much as $250 a year on long-distance trucks of the heaviest types.

Pipe Lines

The pipe line situation moved forward on two fronts during the week, the 11 companies participating the 1820-mile crude line between Texas - Louisiana and the Philadelphia - New York refinery area submitting a definite plan for the project and Plantation Pipe Line Company, engaged in constructing a 1200-mile gasoline line between Baton Rouge and Greensboro, North Carolina, petitioning for invocation of the Cole Act provisions to permit it to condemn for its right-of-way.

Plans for the crude line reached Washington August 11 and were immediately taken under consideration by the coordinator's office and the Department of Justice, which also must pass upon them.

Already, it was said, survey parties are in the field and aerial photographing of the route is completed, but actual construction cannot start until after President Roosevelt has proclaimed the line necessary for national defense purposes and setting the terms and conditions under which it shall be constructed and operated, giving the builders the right to exercise the right of eminent domain, under the Cole Act.

Announcing that the plan, which last week he said was slow in development, had finally come in, Coordinator Ickes warned the Atlantic Coast area not to look to it for immediate alleviation of the shortage.

"While the plan contemplates an immediate start on the new network and its probable completion within nine months," he said, "its effect on the East's oil supplies will not be felt soon enough to be a factor in solving the immediate petroleum problem caused by the deficiency in transportation facilities."

The Plan

Ickes disclosed that Standard Oil Company of New Jersey, Consolidated Oil Corporation, Sun Oil Company, Atlantic Refining Company, Cities Service Company, Socony-Vacuum Oil Company, Tide Water Associated Oil Company, The Texas Corporation, Shell Oil Company, Gulf Oil Corporation and Pan-American Petroleum & Transport Company will participate in the program under a formal agreement, already drafted and to become effective upon the taking of the necessary federal action, providing for the creation of a jointly-owned, privately financed $80,000,000 concern to be called National Defense Pipelines, Inc., and a smaller concern to be known as Emergency Pipelines, Inc.

The agreement is to provide that any others who may desire to participate in the building and use of the project line may do so within three months after the formal execution of the agreement, upon the same terms and conditions as those who have thus far tentatively committed themselves.

The coordinator explained that National Defense Pipelines, Inc., will construct, operate and maintain a 22-inch pipe line originating west of Shreveport, Louisiana, near the Texas border, running northeasterly to near Salem, Illinois, a distance of approximately 490 miles; a 16-inch connecting line from Salem to Wood River, to tap existing lines carrying oil from Oklahoma, Kansas, Texas, Mid-Continent and Illinois areas, a distance of about 65 miles; a 24-inch line from the junction near Salem to the New York and Philadelphia areas, with branches to refining centers, a distance, to New York harbor, of about 1200 miles; and the necessary tank farms, tankage, pumping stations and equipment to deliver an aggregate of 250,000 barrels of oil daily to terminal points at Bayonne and Philadelphia.

At the same time, Emergency Pipelines, Inc., will construct, operate and maintain a 22-inch line originating in the East Texas field and running to Shreveport, to connect with the major line, a distance of about 65 miles.

The two corporations would finance themselves without cost to the federal government, by borrowing approximately 80 percent of the estimated cost of the lines and facilities by the private placement of notes maturing over a five-year period, the balance to be made up through the issuance of junior securities or capital stock which would be purchased by the participating companies on a percentage basis.

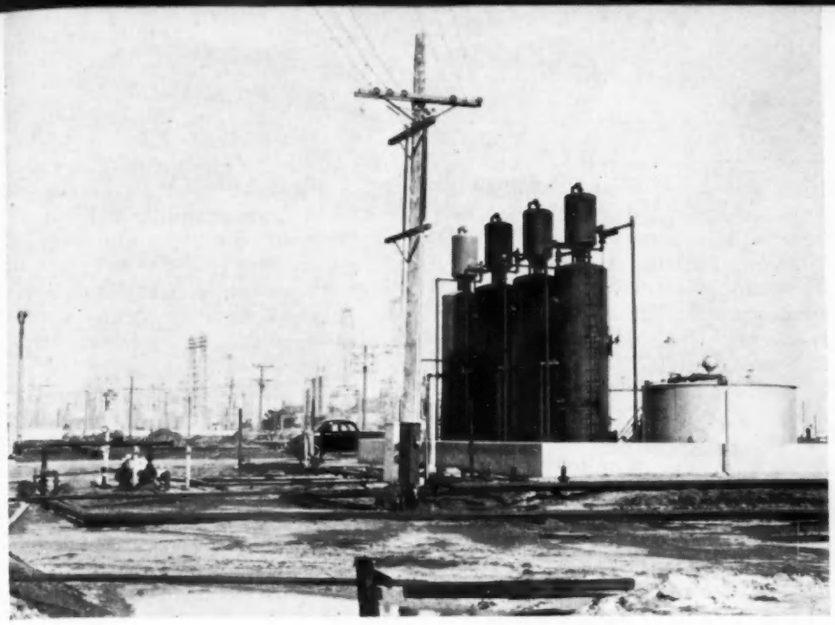
Later in the week, Ickes revealed that conferences with the oil companies were being held almost daily, so that no time need be lost in starting construction once the necessary proclamation was issued.

Major subject of discussion, he said, was the matter of financing the line, but preliminary work also has been done toward securing priorities for needed materials although surveys have indicated that there is enough pipe in sight for the project.

Condemnation Request

Oil administration officials planned quick action on the petition of Plantation Pipeline Company after they were informed by company representatives that most of the materials needed for the line are available and that contracts have already been let for actual construction. However, they said, inability to secure certain portions of the right-of-way, particularly in Georgia, is holding up construction.

Declaring that the line is considered one of greatest importance, Deputy Coordinator Davies said it could be completed by late December if legal obstacles are quickly overcome, and that it would be the first facility to alleviate the East Coast shortage. As in the case of the other line, a proclamation by the President is necessary to enable Plantation to undertake condemnation proceedings.



A typical multiple-well metering unit consists of four scrubbers and two 250-barrel tanks set up in a central location to serve four wells. An eight-well unit is to be installed soon. Note lead lines, meter head, and shipping pump at the left. Flow tanks are used only on special occasions, as when potentials are taken.

Automatic Scrubbers

And Multiple-Well Metering Effect Saving

By GILBERT M. WILSON, Staff Writer

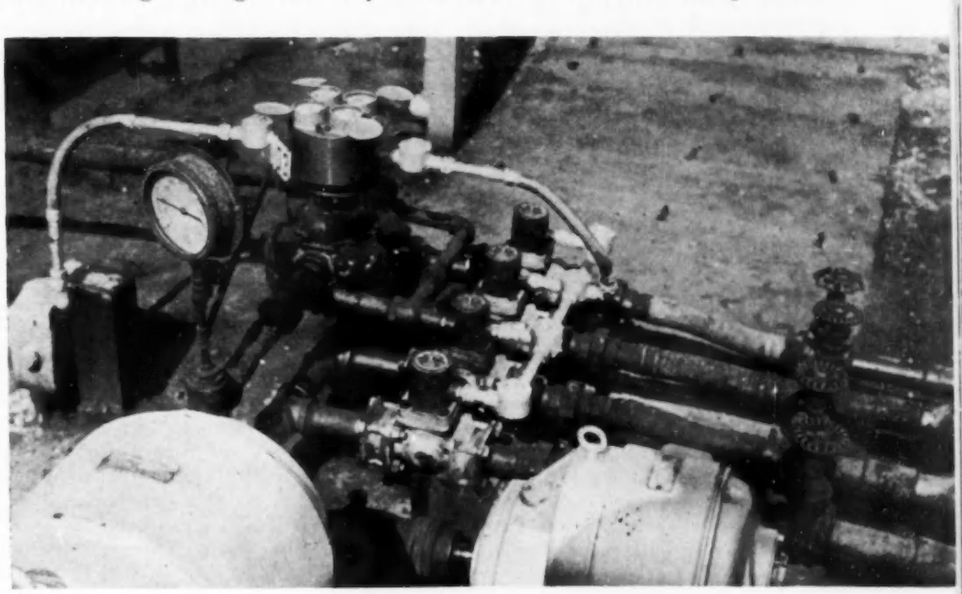
A NEW and successful method of automatically separating, desanding, metering and moving crude oil through the gathering system to the lease shipping tanks is being used with economical and consistently good results by a company operating in the Wilmington field of Southern California. Of still greater interest is the fact that the production from more than one well may be continually metered into a common gathering line system 24 hours a day through but a single registering meter and shipping pump. Centralized units of four wells each are in common use, while an eight-well unit is being designed and built for early installation.

Production in this field comes from both flowing and pumping wells, the oil gravities from the several zones varying between 14 and 31 degrees API.

A typical unit consists of four producing wells that deliver the gross fluid into as many scrubbers that are grouped together at a convenient centralized location. Gas, water and sand are separated out in the scrubbers. As the rising oil level in any particular scrubber reaches a certain height, a float automatically closes an electrical switch which opens the oil discharge line to the pump and starts the electric motor driven centrifugal pump. As the oil leaves the pump it passes through a specially designed multiple-head registering meter, after which it passes out into the oil-gathering lines. A system of special solenoid and electric relay switches, mounted on a nearby switch panel, regulates the order of emptying of each scrubber, and at the same time makes it impossible for more than one to be discharged through the pump at the same time.

Scrubbers Serve As Separators

The scrubbers, which are of new design, are of all-welded construction, and are used as low-pressure



Magnetic selector valves near the four-way meter head. The electric-driven centrifugal pump common to each of the discharge lines is not visible in the left hand corner of the picture. Note the four registering dials top of meter head.

separators in addition to their facilities for removing water and sand from the oil. A scrubber is installed, in this instance, for each well. They are tall 60-barrel tanks, slightly over 26 feet in height overall, and 5 feet in diameter. A smaller tank on the top of each scrubber serves as a trap that removes most of the gas from the incoming oil. As the oil from the well enters the top of the smaller tank, the greater percentage of the free gas breaks out and passes on out through a gas line outlet at the top.

After most of the gas is liberated, the oil falls downward through a vertical pipe in the center of the large chamber. Water in the lower part of the scrubber is automatically maintained at a level somewhat lower than that in standard oil scrubbers. As the vertical pipe releases the oil at the bottom of this column of water, the oil rises to the surface, dropping out the sand as it travels upward. The sand drops into the conical bottom of the scrubber and is removed at periodic intervals by a drain valve. The extra large chamber space above the water level serves as storage for the oil, and also aids in the final separation of any free gas that may not have escaped in the smaller separating tank.

The mean oil level maintained in the chamber is held at 11 feet, 7 inches up from the bottom, with the normal operating low and high levels approximately 12 inches below and above that level.

Gas pressure in the scrubber is held with a regulator at 12 pounds per square inch, and escapes into a 6-pound gas-gathering system. The scrubber can operate at any pressure from 22 pounds on down to atmosphere.

Electrically Operated Valves

From each scrubber a 4-inch oil discharge pipe conducts the oil to a normally closed magnetic selector valve situated near the transfer or shipping pump. This valve is operated electrically. From this valve a pipe connects into a common suction of the single centrifugal pump that is driven by a gear-reduction electric motor.

When the liquid level in the scrubber has been raised by the incoming oil to a point where the float switch is tripped, an electrical circuit is closed which energizes a solenoid that in turn opens the float-switch circuits on each of the other scrubbers that are tied in with this particular field unit. Simultaneously, a second circuit is closed which energizes still another solenoid. This second solenoid actuates a relay which in turn causes the magnetic selector valve to open. At the time this valve starts to open, a small solenoid in the meter head causes a lever to engage the small gears of the oil meter register for that particular well or scrubber.

As the selector valve on the oil discharge line reaches the full open position, it trips a mercoid switch that closes a common holding circuit, causing the main switch to engage and start the shipping pump motor. The oil is then pumped through the meter, is recorded by the individual registering dial, and then on into the lease tanks. The lines and automatic valves from each scrubber come together at a point near the meter and pump. The meter head shown has four separate registering dials, each one measuring the production from a certain well.

It may be noted in the foregoing that, due to a method of connecting the several switches and solenoids, no other scrubber may come on or "dump" until the first unit has pumped and metered sufficient oil from the oil chamber to allow its float to fall to the point where it trips the float-switch. This opens the initial circuit, and causes the circuits of all of the succeeding stages, including the magnetic selector valve, meter head solenoid and pump motor, to return to normal, or inactive positions. After this occurs, and not until then, any one of the other scrubbers which may have been standing ready to come on will immediately do so, energizing and duplicating each step in rapid succession, and remaining on until that scrubber also is emptied.

Except for the small solenoid in the registering meter head, all switches, selector relays and main solenoid circuits are neatly wired up in an enclosed switch board on a nearby pole. Manually-operated controls mounted on the outside of the switch panel box are provided for miscellaneous or emergency uses. All conduits between units and switchboard panel are laid underground.

The oil pumped out from each scrubber at the current settings of the float switches is approximately 6 barrels, and is removed in approximately 8 minutes. Depending upon the production rate of the well producing into the particular scrubber, the emptying cycles for each scrubber occur from 15 to 25 times per 24 hours.

Capacities of the scrubbers, shipping pump and meter for each field unit have been carefully calculated and checked so that an ample margin of safety is provided at all times. For example, in the case of the four-well unit referred to above, if all four scrubbers happened to fill up and be ready to empty at the same time, the extra large volume in the oil chamber of each would be sufficiently large to hold another 4 hours of production at the present production rates of wells in the field. Approximately 30 barrels of space is provided for over and above the mean operating level in the oil chamber of each scrubber.

The shipping pumps have a normal capacity of approximately 46 barrels per hour. The meters are capable of handling from 10 to 80 barrels per hour, so they operate with a high degree of accuracy in the middle of their efficiency curve.

Two 250-barrel flow tanks also are set at each central setting of the scrubbers. These are used for gauging production obtained during initial potentials or other miscellaneous production tests, where the production rates would be too high for the normal capacity of the scrubber-metering system. These are the only flow tanks necessary where this system has been installed.

Operation Lowers Costs

An extraordinarily high degree of efficiency, along with substantial savings in the cost of gauging and gauging facilities, is being obtained with this new development. The system of automatically separating, metering and pumping the production from single wells has been in use for several years, but the application of the method to multiple-well units has been used for but slightly over one year. Out of 80 wells on which automatic metering has been used, 36 are still on single, while 11 four-well units are operating.

The use of this system also is eliminating another expensive operation in this field. A local ordinance provides that all tank settings must have a concrete fire-wall around them, the volume of such enclosures being 125 percent of the total volume of the tanks in each setting. Since the production is constantly being shipped, no large flow tanks are necessary, and the relatively small volume of the scrubbers and the two small flow tanks at each setting permits a definite saving to be realized in construction and materials of fire walls.

Semi-Permanent

Boiler Setting

Permits Alignment

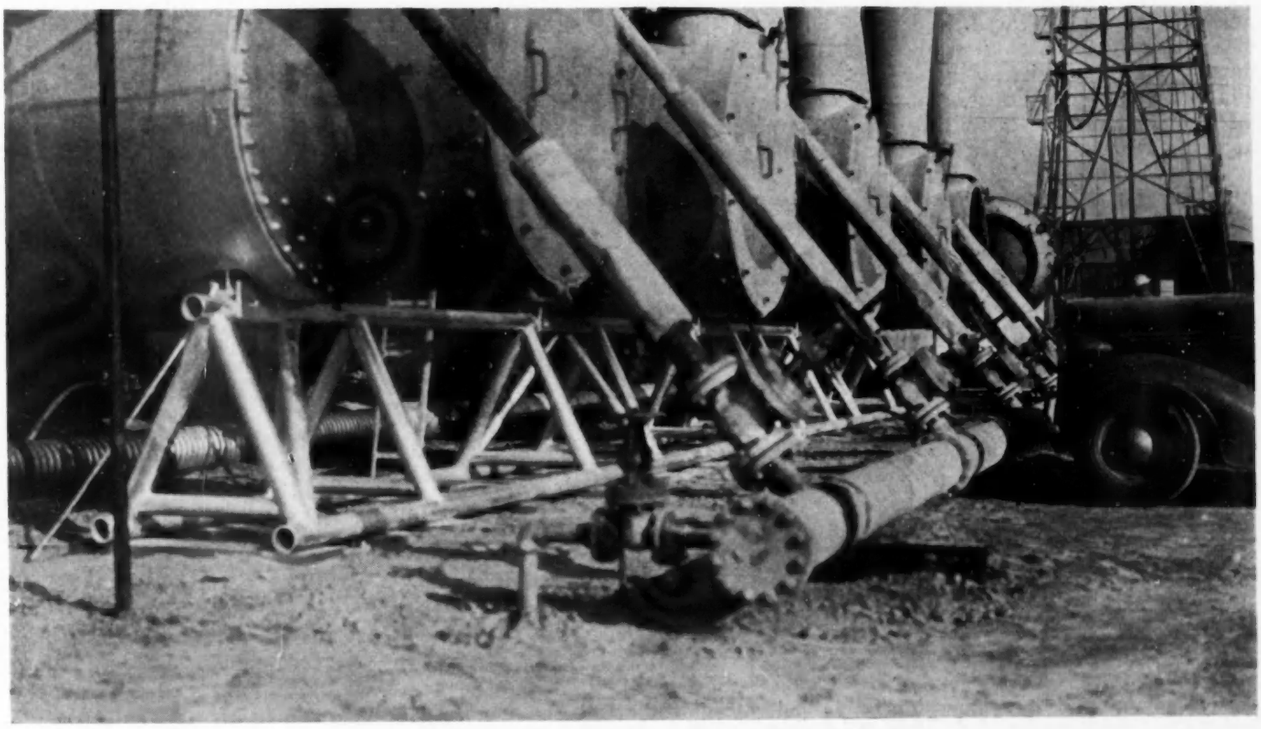
DURATION of drilling operations and possibility of using one boiler setting for multiple wells determine the extent toward which it is economical to invest time and materials in establishing the steam generating units on firm bases.

Where concrete pads or piers must be furnished, boilers as well as the derrick foundations incur considerable investment that carries no salvage value, and which must be expensively removed at the close of the drilling campaign or remain to clutter up the lease.

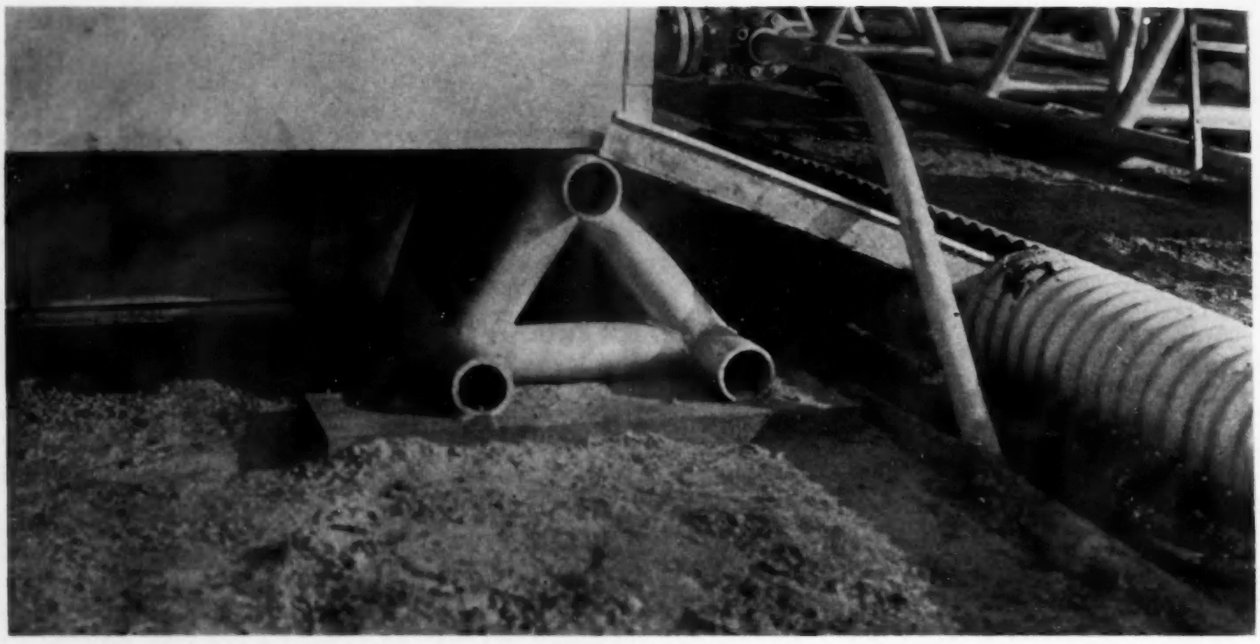
One company whose work justifies semi-permanent mountings of the boilers has worked out a system of boiler substructure or skeleton foundation which, simply laid on planks atop the ground, affords uniform and rigid support at comparatively low cost.

Alike in design, squat triangularly braced substructures are used at both ends of the boiler unit, the raw material being discarded joints of standard drill pipe, cut to length with cutting torch and welded into series of joined A-frames. The supports for the smokebox end are made as a series of A-frames with a continuous rail under each series of legs. A continuous rail is also used across the apex of each frame, with each section of supports being made as long as desired, but always more than one boiler. Diagonal bracing is used by stepping in a joint of pipe at the leg of one A-frame and bringing the opposite end of the brace to the top rail, central between each pair of frames. The next brace starts at the leg of the next frame, on the opposite side and is brought to the center and welded. Adequate cross braces are welded between the legs of each frame to prevent spreading when weight is applied.

The supporting structure beneath the mud ring is similar to that employed at the stack end, but not nearly so high. The height of both structures is governed by the opinion of the operator so that the boiler will be at the desired elevation above the ground surface when set in place. The difference



Smoke-box end support for boilers is welded up from drill pipe into continuous bearing surfaces upon which is positioned a saddle under each unit to provide for lateral motion and maintain boilers in alignment.

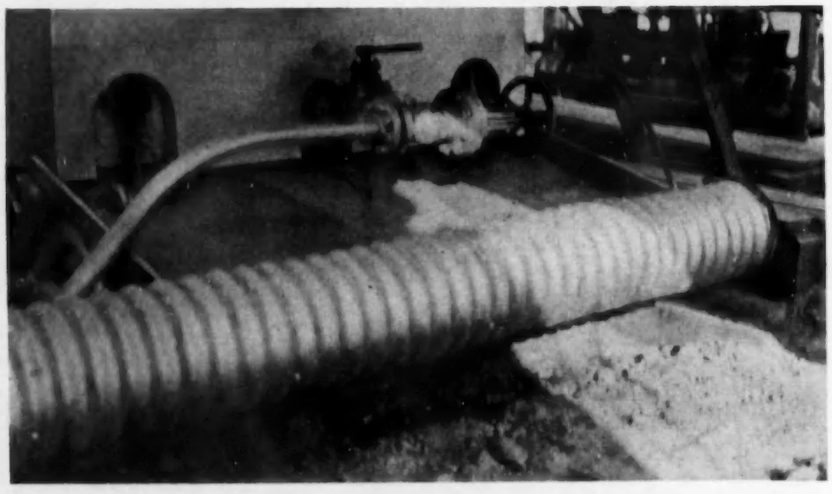


A-frame support for mud ring provides ample space for burner setting above ground, with access to draft inlet simplified. Under the edge of the mud ring is slipped the drainage apron which carries wash water into the slotted culvert and thus avoids soaking ground at boiler setting.

in the height of the front and back is sufficient to level the boiler when it is let down on the supporting frames, the ground being graded before the battery is assembled.

Width of the base of these frames determine largely what type of bearing surface may be used. If the legs of the frames are brought too closely to each other, the weight is concentrated and the bearing surface calculated accordingly. But if sufficiently wide, planking can be laid on the surface of the ground to distribute the weight over a greater area, thus eliminating expensive concrete piers which have no salvage value.

As the boiler at the front mud ring is on a horizontal plane, no adjustments or plates are necessary when setting the unit down upon the frame at this point. But as the waist, or barrel of the boiler is round at the point of contact with the higher structure, a bearing pad is attached to the boiler which rests in a channel welded to the top of the frame beneath the point of boiler support. A wide section of channel iron is prepared by cutting into the web with an arc to conform to the contour of the boiler at this point and dressed down so that a smooth surface is available at the point of contact. The flat side of the channel iron rests in a retaining groove which is made by welding retaining lugs to the rail at the top of the series of frames so that slipping will be prevented. It is roughly estimated that from $300 to $400 is saved at each setting of five units by the use of this type of boiler support, when compared with one which requires a series of concrete piers for the ground bearing surface.



Carried on the mud-ring supporting frame and extending the full width of the boiler, this trough catches all drillings and wash-down water, carrying it away from immediate vicinity of boilers. Right-angled blow-down line between firebox and drain trough carries sludge away from units and conserves space.

Use of the series of A-frames conserves space around the boilers for wash-down and other servicing work. To maintain the ground under the A-frames and prevent sagging, each boiler is fitted with an apron, extending from the edge of the mud ring to a continuous drain trough, made of slotted corrugated culvert sections, into which any wash-out water is flushed, and prevented from soaking the ground adjacent to the boilers.

The steam main, tied in to the boilers with 45-degree down drops, is mounted on heavy timbers so that expansion stresses may be relieved through lateral motion of the horizontal pipe. For a distance above each main steam valve, the down drop is insulated to provide against possible injury through contact with the hot metal.

Analysis of Lifting Performance

In Natural-Flowing Wells

By S. F. SHAW, Consulting Engineer

THE statement frequently has been made that a natural-flowing well presents nothing different in principle from a well flowing on artificial gas lift. While this is true, it should be added that the study of a natural-flowing well is attended with very much greater difficulty than one on gas lift, especially where production is restricted, inasmuch as it is almost impossible to exercise a close degree of control over a well flowing naturally. It is, therefore, difficult to analyze the phenomena taking place with natural flow until one has had considerable experience with the use of artificial gas lift.

Air Lift Operations in Water Wells

The basic point for starting an analysis of a natural-flowing well is the air lift, where water which is the standard for comparison of liquids, is lifted by air which, is the standard of comparison for gases. In water wells, there seldom is any gas associated with the liquid in the underground reservoir, therefore the input air measurements very closely reflect the quantity of energy necessary for lifting operations. It is true that water takes up in solution a certain amount of air, perhaps 2½ percent, but by the time the mixture has reached the top of the well where the back pressure is reduced to a minimum, it is probable that the quantity of air dissolved in the water is too small to cause any measurable effect on the computations connected with the lifting operations.

Air conforms more nearly to the characteristics of a perfect gas than do any hydrocarbon gases associated with oil wells, and this enables computations with air to be made that probably more nearly approach theoretical considerations than is possible with any mixture of hydrocarbon gases usually present. In hydrocarbon gases there are mixtures that require taking into account a large percentage of super-compressibility, more particularly with the higher pressures. There are solutions of liquid with the gas, and the wonder is that any satisfactory approach can be made to analyze these lifting operations that are of any value.

Lifting Oil With Hydrocarbon Gases

One condition of oil-field gases of which almost no account is taken is that of the quantity of natural gasoline contained in the gas that is discharged from the well with the oil.

The effect on calculations of gas-oil ratios of this gasoline content may be cited by taking an extreme case where the oil is being lifted with 4000 cubic feet per barrel and where the gasoline content of the gas is 10 gallons per thousand cubic feet. This would mean that 40 gallons of gasoline, or approximately 1 barrel of liquid is being extracted as gasoline. If this quantity of liquid is added to the barrel of oil lifted, there are then approximately 2 barrels of liquid lifted by the remaining gas after making allowance for the gasoline, which at 35 cubic feet of gas per gallon of gasoline makes a total of 1440 cubic feet to be deducted from the 4000 cubic feet of gas as measured at the output orifice meter, leaving 2560 cubic feet to be divided by 2 barrels, resulting in a gas-oil ratio of 1280 cubic feet per barrel instead of 4000 cubic feet.

It is not implied that all of this gas that makes up the gasoline content is of no benefit from a lifting point of view. The expansion of this gas from the flowing pressure to the discharge pressure must be of some benefit, although it cannot be beneficial to the same extent that would be the case with a perfect gas, since it is in solution for part of the distance that the oil is lifted, and during this period it must be lifted by the energy in gas that is not in solution. Thus, in extreme cases, can be seen the much greater effects of variables that take place in lifting operations in an oil well compared with those in an air-lift water-well operation.

At Seminole, the original gasoline content was much lower in the gas that accompanied the oil in the early gas-lift operations than in the later stages, but the average crude natural gasoline in gas-lift operations was about 1.65 gallons per 1000 cubic feet when the output ratio was about 3000 cubic feet per barrel of crude oil. This meant that about 5 gallons of natural gasoline were extracted for each barrel of crude oil lifted, amounting to about 12 percent of the total quantity of oil lifted, and reduced the output ratio to 2500 cubic feet per barrel of liquid. In Oklahoma City, gas in the early stages of the field contained from ½ to ¾ gallon of gasoline per 1000 cubic feet of gas, and now contains from 2 to 10 gallons per 1000 cubic feet. However, at present oil is not being lifted by gas-lift, and if it were so lifted, the gasoline vapors would be diluted by the dry gas to the extent that it would be considerably below the content per 1000 cubic feet now prevailing.

Mention is made of these points to indicate the complexity of the problem if lifting methods with these gases are approached from the theoretical point of view. It seems to the writer, therefore, that the only satisfactory manner in which this problem can be approached is by way of actual field observations, and these observations require a very large number of tests, covering a lengthy period under as careful supervision as possible, to arrive at any conclusions that possess any practical value.

Factors That Affect Lifting Operations

Immediately after a well is completed, the factors that enter into

the producing conditions, but which cannot be altered readily, are those of length of casing which is determined by the depth of the reservoir, and the diameter of the casing which is determined by the cost of drilling, the cost of the pipe, and the quantity of oil ultimately to be produced.

A factor that can be altered is that of the diameter and effective length of the tubing, although there are limitations to the maximum diameter of the tubing that are imposed by the size of the casing. If the well is not operating under high-pressure conditions, the tubing can be pulled easily and a string of another diameter run, also the effective producing length can be altered by raising or lowering the tubing, but these changes involve a certain expense, and are not likely frequently to be made unless it is readily apparent that this will bring about conditions making for betterment in the producing conditions, and this is not readily apparent until after the changes are made. For purposes merely of testing the flow from a well, it is difficult to overcome the mental inertia that would permit making various changes in the size and length of the tubing.

After the well is opened to production, the variables that accompany the performance of a flowing well are as follows: Quantity of oil produced over a given period; quantity of gas produced; bottom-hole flowing pressure; and discharge pressure, or back pressure, at the tubing head. If the flow is through the tubing, and the fluid in the annular space has been displaced by gas to the bottom of the tubing string, close approximations of the flowing pressure can be ascertained by adding the weight of the column of gas to the casing pressure at the well head, without the necessity of running a pressure bomb. If there be any doubt as to flowing pressure being correct, a pressure bomb should be run to obtain accurate pressure data.

After the tubing is suspended in position, the only changes in a well on natural flow that can be made in the flowing conditions that lie within the reach of the operator, are those of enlarging or reducing the size of the choke, which changes affects all four flowing conditions mentioned. Enlarging the choke usually results in the production of an increased quantity of oil and gas; the well-head discharge pressure, or back pressure, usually declines; the flowing pressure at the bottom of the tubing declines; and the casing pressure also declines provided the annular space between the tubing and casing is free of liquid and provided no packer has been set. The reverse phenomena accompany the use of a choke of smaller size. Choking is a relative term. Back pressure on a separator produces a choking effect. The running of a tubing into a casing has a choking effect, and sometimes a very serious effect if the tubing is too small. In Oklahoma City many wells were reduced at the discharge to a 4-inch opening which was called a "choke."[1]

Practically no single variable can be changed in a natural-flowing well without, at the same time, changing all other variables. It, therefore, becomes an involved study to evaluate all these variables, and this cannot readily be accomplished without compiling a very large number of tests, covering a period of many months, or even several years, inasmuch as a wide range of producing conditions cannot be covered until the reservoir pressure has declined markedly from the conditions that prevail when the tests are first started.

In gas-lift flow, the gas accompanying the oil from the reservoir has usually declined until there is insufficient gas from the reservoir to flow the well at all, and when placed on gas-lift only that amount of gas need be added at each test to bring about a series of performances that can be evaluated one at a time.

Significant Rates of Flow

In natural flow, as in gas-lift flow, there are four principal rates of flow[2,3] as follows: (1) point of no flow due to there being just insufficient gas present to lift the oil above the top of the eductor; (2) the rate of maximum efficiency, or rate of minimum output factor; (3) the rate of maximum capacity, or rate of minimum flowing pressure; (4) the point of no flow caused by excessive quantity of gas.

The rate of no flow due to insufficient quantity of gas, as a rule, is of theoretical importance only, and for natural flow need not be considered at all. The rate of maximum efficiency is one of considerable importance, but lies in the region of production where there is surging in the flow column, therefore cannot easily and satisfactorily be located directly by tests except to plot the tests and locate the point on the flow graph. The rate of maximum capacity is probably the easiest of all significant rates to locate, and in many respects is the most important rate to determine in gas-lift operations. There are, of course, innumerable other rates of flow, but such rates are at the expense either of efficiency or of capacity, and have little significance in connection with oil well testing operations.

Testing for Rate of Flow

In making gas-lift or natural-flow tests to construct graphs, it is advisable to test the orifice meters just before each test. All pressures should be taken with test gauges, which should be tested just before making these observations. Gauges of oil should be accurate. The usual field gauge taken in a tank of large diameter by reading a gauge pole or a measuring tape to the nearest inch or half-inch, is not suitable for these tests. The gauges should be made in tanks of smaller diameter, so that the observer can see the rise in the gauge tank, and can measure the rise of liquid to the nearest second by means of a watch. Several gauges should be taken until the observer makes certain that the rate of flow is a settled rate and not one that is declining, due to changes in the conditions in the reservoir. Gauges in separators where the rise of the liquid column can be observed are much to be preferred to gauges in a stock tank of large diameter, unless the well is surging heavily, in which case the tests should be made hourly in a stock tank, unsatisfactory as this may be.

Controlling Rates of Flow

Control of the flow at either of the rates of maximum efficiency or maximum capacity can usually be maintained in gas-lift flow at the will of the operator, but it is practically impossible to control the flow by chokes or by other means, in a natural flowing well, so as to maintain flow at either of these rates, owing to the absence of control over the gas that accompanies the oil from the reservoir.

If a well flows with a quantity of gas that is greater than that required for maximum capacity, in the course of time is usually passes through the stages successively of maximum capacity, then of maximum efficiency, then breaks into a heading condition, and then dies. When this point is reached, there

is almost sufficient gas present with the oil to lift it, and the introduction of gas-lift involves the addition of only that quantity necessary to make up the deficiency and to maintain the well in a flowing condition at the rate that best suits the purpose of the operator.

In wells where pressure maintenance is employed, reverse phenomena take place, in that the gas in the upper part of the structure gradually encroaches into the producing wells situated around the fringe in the vicinity of the gas-oil contact, increases the gas-oil ratio, and impedes greatly the entrance of oil into the wells and finally drowns them out to the extent that the wells must be shut in.

Graphical Representation of Tests

The graph of an actual test on a gas-lift well is shown in Figure 1. The points of maximum efficiency and maximum capacity can be established fairly closely in gas-lift flow, in fact, they can be accurately established by making a sufficient number of tests, but this seldom can be done in natural flow. There may result accidentally a flow at maximum efficiency or at maximum capacity in a natural-flowing well, but the mixture of oil and gas in the reservoir is not such as to permit the operator to select a rate of oil and gas at his will. Therefore, it becomes necessary to make many tests on natural-flowing wells and to plot these tests until in the course of time he has been able to locate reasonably closely the two most important rates of maximum efficiency and capacity.

Referring to Figure 1, the point of no flow is designated approximately at the point where the flow of gas through a 7-inch casing with 2½-inch tubing, 3991 feet in length, was about 600,000 cubic feet per day. The first point of oil production actually observed on the graph was 605 barrels per day with the well flowing naturally. The next point was obtained by injecting 786,000 cubic feet of gas per day, which resulted in an output of 2,673,000 cubic feet per day, or 3007 cubic feet per barrel, and a production of 888 barrels per day, which is close to the rate of maximum production. The well was produced with no back pressure, and it is observed that the production of gas on natural flow was insufficient to produce within 283 barrels of that possible on gas-lift flow under the prevailing conditions of possible flow into the well, as well as diameter and length of casing. Since the maximum production under the existing conditions was approximately 888 barrels per day, the addition of more input gas resulted in a reduction of the capacity of the well-casing, therefore, the production declined successively to 878 barrels, 837 barrels, and then to 744 barrels per day as additional volumes of gas were added after the maximum capacity rate was reached.

There was no possibility of increasing the production on natural flow to 888 barrels per day because there was insufficient formation gas accompanying the oil from the reservoir, consequently the rate of maximum capacity could not be reached on natural flow. The rate on natural flow with all back pressure removed was somewhat above that of the rate of maximum efficiency, that is, about 605 barrels per day, whereas the rate of maximum lifting efficiency would appear from the graph to be about 550 barrels per day, but the production on natural flow could not be changed other than by choking back the well, which would have changed the rate of both oil and gas, and under the conditions in this field this would have resulted in causing the well immediately to cease flowing.

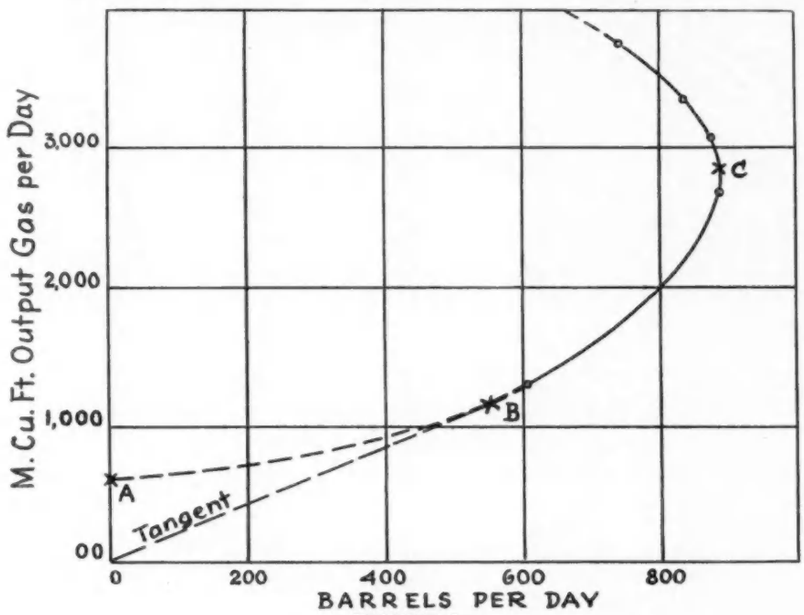


FIGURE 1
Production test on well

Had there been insufficient gas coming from the reservoir to maintain any rate of flow whatever, it would have been possible to reduce the admission of input gas to the point where the rate was that of maximum efficiency, that is, the rate at which the input gas factor would have been at a minimum, and then by careful adjustment, the producing rate could have been reduced below the point of maximum efficiency down to the point where there would be no flow at all, as indicated approximately at point A.

Graphs for Capacity of Eductors On Artificial Gas-Lift

In Figure 2 are shown graphs for the flow of oil in the Seminole

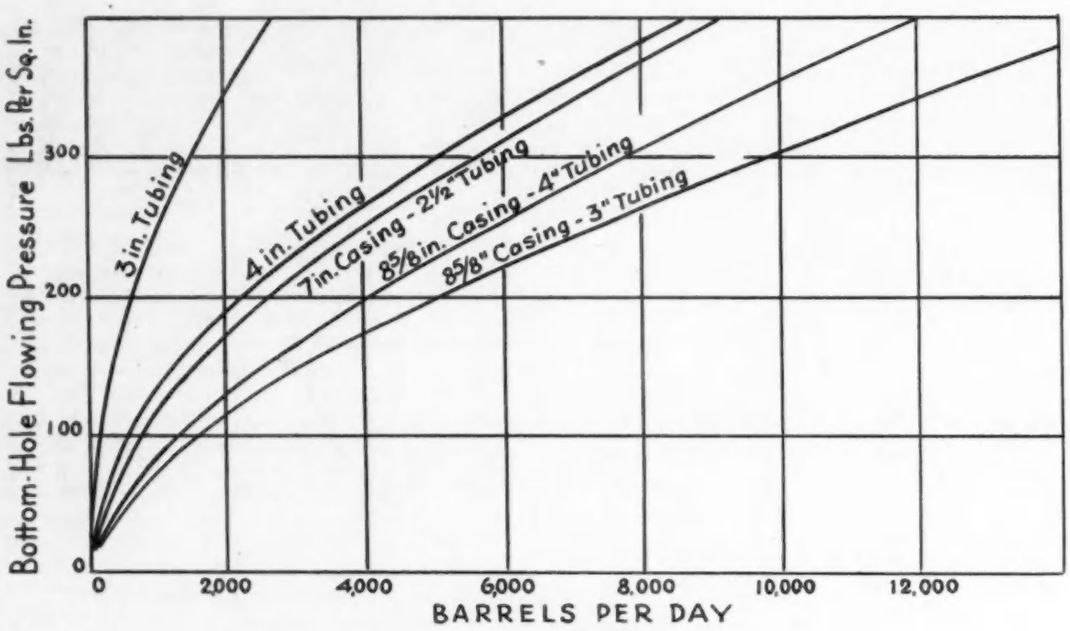


FIGURE 2

Capacities of eductors in the Seminole field with given flowing; zero back pressure

field at the rate of maximum capacity through different sizes of eductors[4]. It is observed that the differences are very pronounced in the rates of flow through different sizes of eductors and at different flowing pressures.

The capacities of various sizes of eductor that were used in the Oklahoma City field are shown in the graphs in Figure 3[5]. A comparison of capacities of these eductors of 6500 feet in length with those for eductors in the Seminole field of 4000 feet in length, illustrates the pronounced differences in capacities of eductors resulting from increases in length. Control points for 3-inch and 4-inch eductors in the Oklahoma City field are not nearly as complete as for the Seminole field, therefore, these graphs may be considered as tentative only.

The density, viscosity, temperature, and other physical properties of the oil will have considerable influence on the shape of these graphs. Densities of the oil at both Seminole and Oklahoma City were not greatly different, but bottom hole temperatures at Seminole were not as high as those in the Oklahoma City field, consequently the lifting efficiency at the lower end of the eductor would

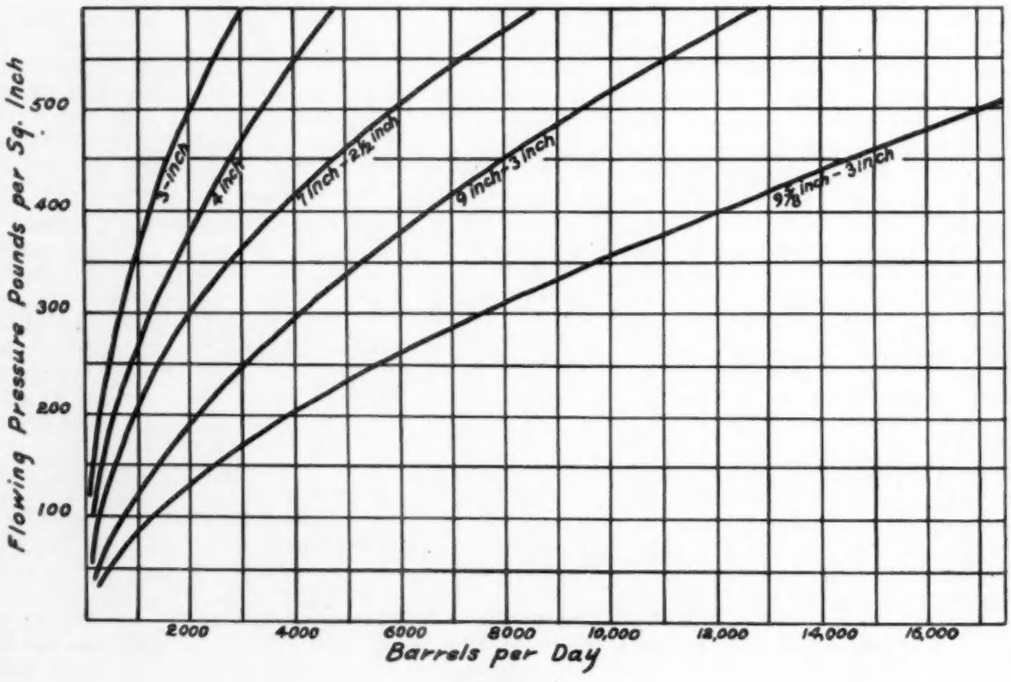


FIGURE 3

Capacities of eductors in the Oklahoma City field at given flowing pressures

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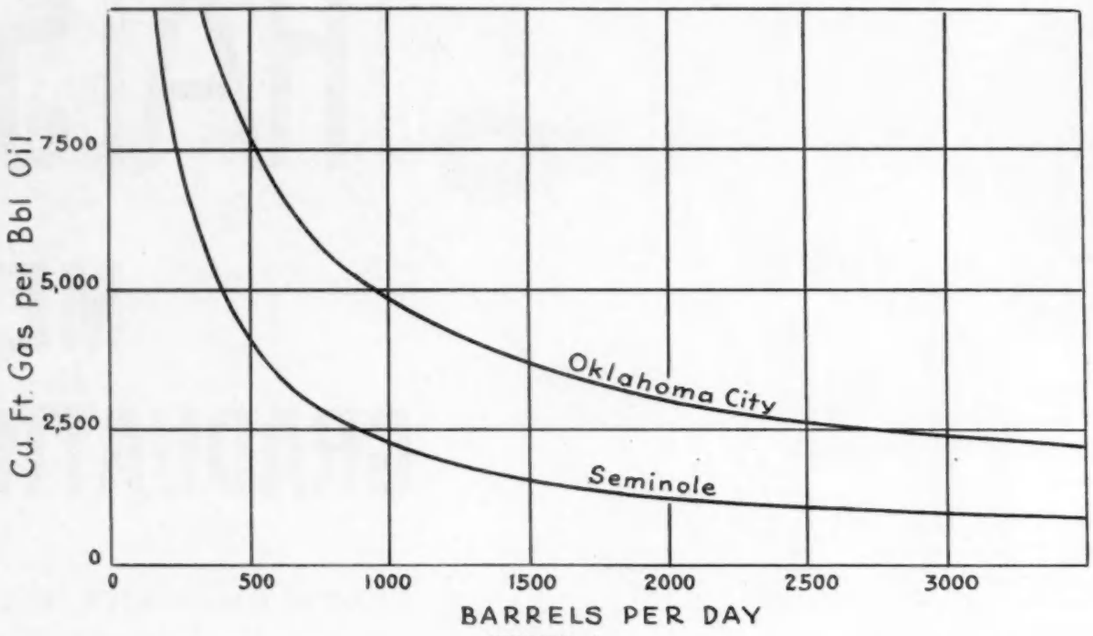

FIGURE 4

Cubic feet of gas required to lift one barrel of oil when produced at a given rate per day

seem to be higher in the Oklahoma City field. On the other hand, the necessity for using more gas to lift a barrel of oil through the longer eductors in the Oklahoma City field would tend to reduce the temperature at the upper end of the eductor to a greater degree, thus reducing the lifting efficiency through the upper portion of the eductor. Much more paraffin was deposited on the upper portion of the eductor in the Oklahoma City field than at Seminole, which made for reduced lifting efficiencies.

In Figure 4 are shown graphs of the output gas factors for flow at maximum capacity with the flow through the annular space in the Seminole and Oklahoma City fields, when using 7-inch casing and 2½-inch tubing. These factors were established on artificial gas-lift, but they apply equally well to natural flow. It will be observed that there is considerable difference in these factors brought about by the difference of 2500 feet in the length of the eductors.

A comparison is made in Figure 5 to illustrate the difference in flowing pressures required to lift a given quantity of oil through 3-inch tubing with discharge pressure at atmospheric pressure in the Seminole and Oklahoma City fields. The control points for the Seminole eductors were fairly sat-

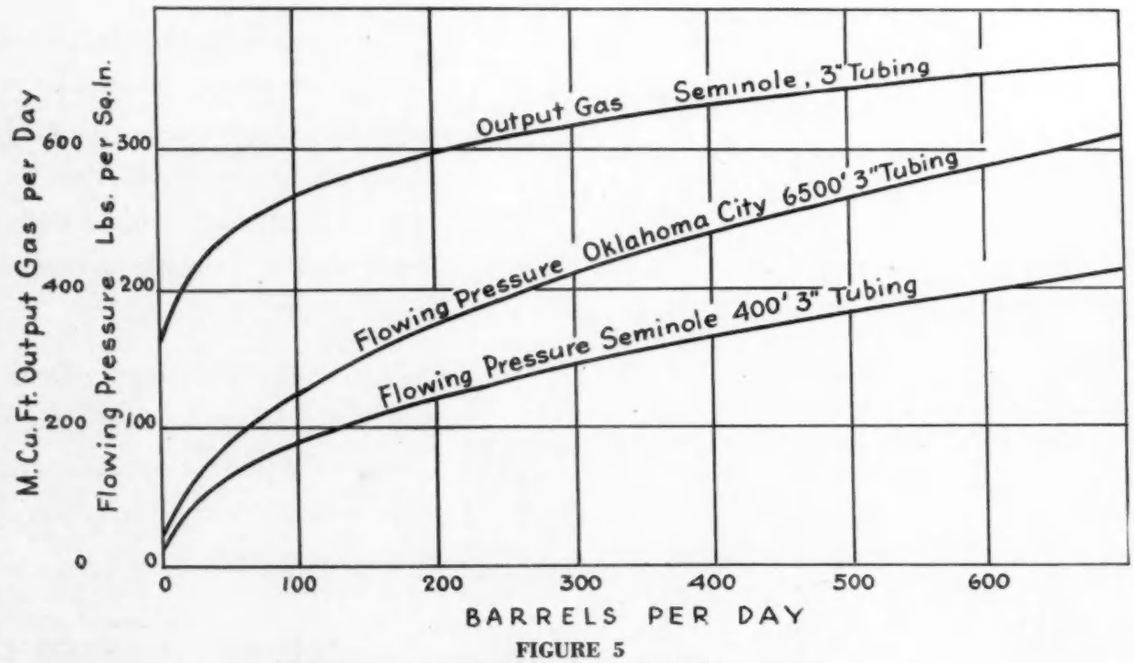

FIGURE 5

Maximum capacity, 3-inch tubing, at given flowing pressure

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isfactory, but those for Oklahoma City were not available for as many different flowing pressures as could have been desired. For instance, with 200 pounds per square inch flowing pressure, the production at maximum capacity at Seminole was in the neighborhood of 600 barrels per day while in Oklahoma City it was about 270 barrels per day. The total quantity of output gas per day required in the Seminole field for producing at maximum capacity through 3-inch tubing is also shown in Figure 5. These are the types of graphs desirable to construct for wells flowing naturally, and yet the approach cannot be made in the same manner as when producing wells on artificial gas-lift, since the information is not available in the same form and under the same conditions.

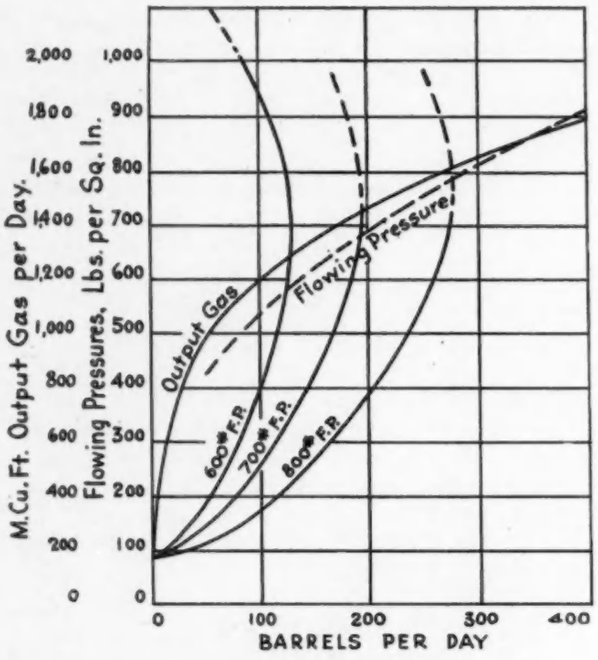

FIGURE 6

Oil-gas relations in 6800 feet of 3-inch tubing with given flowing pressure and back pressure of 400 pounds per sq. in.

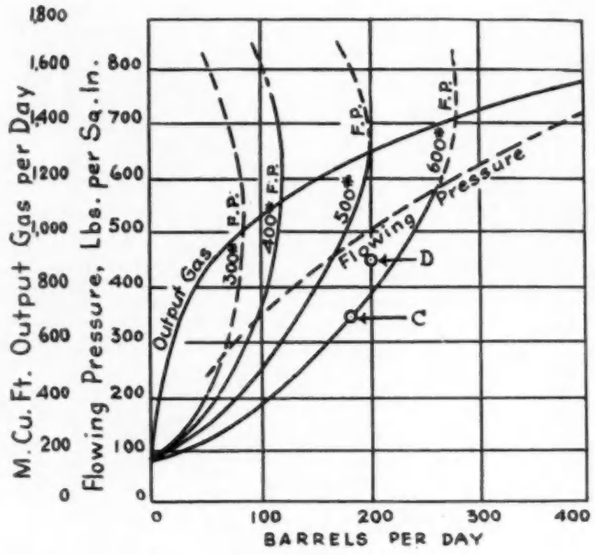

FIGURE 7

Oil-gas relations in 6800 feet of 3-inch tubing with given flowing pressure, and back pressure of 200 pounds per sq. in.

Graphs for Production Characteristics of Natural Flowing Wells

In a natural-flowing well now usually producing under restricted allowables it is desirable to construct the types of graphs previously mentioned with the added condition that it is necessary to make graphs for several sets of back pressures, or tubing discharge pressures, which complicates the problem greatly. Thus, for a well flowing naturally at restricted rates, and where flowing pressures are high, it is necessary to construct graphs for discharge pressures at intervals of perhaps 100 pounds per square inch, starting at atmospheric discharge pressure and increasing the interval by 100 pounds until the entire range is covered under which the well operates at different periods, which may be up to 900 or 1000 pounds, or even higher, back pressure.

A natural flowing well, operating under back pressure because of restricted allowables, is subject to a condition that is different from that of an artificial gas-lift well, in that there is no expense attached to the operation for discharging gas from the tubing of a natural flowing well under high back pressure even though, so far as lifting operations are concerned, the greater part of the energy in the gas is wasted, whereas when employing artificial gas-lift, it usually is the case that any gas used for input purposes is at some expense, whether it is drawn from a gas well, or whether it is compressed in a compressor plant. When using gas-lift, the application of back pressure always increases the quantity of gas required to lift a barrel of oil, and thereby increases the lifting expense per barrel, therefore, it is in the interest of economy to eliminate back pressures so far as possible when employing artificial gas-lift.

In Figure 6, graphs are constructed for a group of wells flowing naturally to show the relation between production of oil and quantity of gas produced when a back pressure of 400 pounds per square inch is applied, and when flowing pressures of 600 pounds, 700 pounds and 800 pounds prevail. The wells are produced through 3-inch eductors approximately 6700 feet in length. Graphs are first constructed similar to those in Figure 1 by building up a single graph at a time for only one flowing pressure at the given back pressure. After a sufficient number of points are obtained that permit constructing the graphs similar to that in Figure 1 over a range sufficiently wide to include the rate of maximum capacity, these single graphs are transferred to Figure 6 to cover a series of graphs with the same back pressure, but with different flowing pressures.

In Figure 1, tests were made to locate the points of maximum efficiency and capacity, but in graphs of flowing wells, it is nec-

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"... while diamonds will drill somewhat faster in hard rock drilling, the Haystellite (inserts) will equal and better the time in softer material such as shale and sands."

*"Adaptability of Hard Surfacing Materials to Oil Field Diamond Drilling," by Edmond B. Stiles; Reprinted from THE PETROLEUM ENGINEER. A copy will be sent to you upon request.

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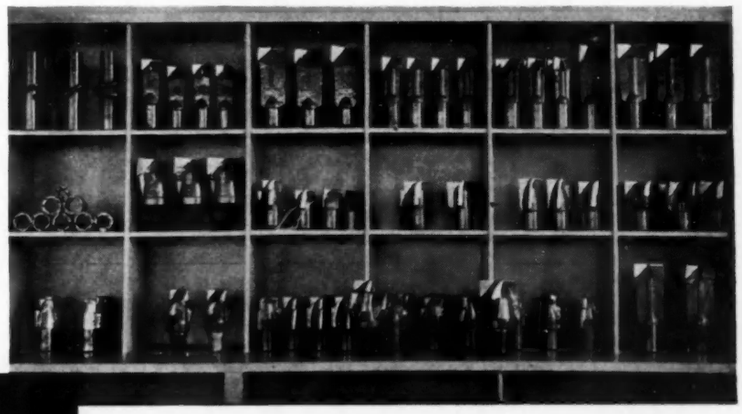

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essary to take these points as they come, particularly during the time when restricted allowables are in force. This often results in constructing graphs that start from a point close to the point of no flow due to an insufficient gas supply, and working upward into the range of larger production as reservoir pressures decline, and as periods of larger allowables occur.

Figure 7 shows graphs, covering the same conditions as for the set in Figure 6 just described, except that the back pressure is 200 pounds per square inch instead of 400 pounds, and the range of flowing pressures is of lower order than for the graphs with 400 pounds back pressure. By comparing the two graphs for flowing pressure of 600 pounds in both of the Figures 6 and 7, it will be seen that the peak of production, or maximum capacity, with the higher back pressure is about 135 barrels per day as compared with a maximum capacity of about 275 barrels per day with the lower back pressure, and the gas-oil ratio is lower with the back pressure of 200 pounds than when the back pressure is 400 pounds.

The graphs for quanties of gas produced when operating at maximum capacity of oil for a given back pressure and for a given flowing pressure are transferred from Figures 6 and 7 to Figure 8, which provides a graph giving the locus of points when operating at maximum capacity for a given back pressure. Similarly, the points of maximum production of oil under a given flowing pressure are transferred from Figures 6 and 7 to Figure 9, thus giving a graph for the locus of points for the maximum production plotted against flowing pressures when operating at a given back pressure. The graph for maximum capacity at a given flowing pressure for the Oklahoma City field at 6500 feet in depth, with no back pressure, is also noted in Figure 9 which gives a comparison with the graphs where back pressures are employed, and illustrates the marked effect on the capacity of an eductor when back pressures are removed. Of course, some other factors, such as physical characteristics of the oil may account for a part of this difference, but the major difference is caused by the application of back pressure.

It will be noted that the basis for these graphs goes back to the simple type of graph shown in Figure 1, where tests are made to locate the rate of maximum capacity. In some fields, where permeability is high, a set of these tests for a given back pressure can be made in a single day in which the entire range between rates of maximum efficiency and maximum capacity can be located for a given set of conditions. In wells where the permeability of the reservoir rock is low, it may take a full day to locate definitely a single point, because of the time required for the well to settle down to a steady flowing rate, in which case the time required to locate a set of these points may be rather extended. Much patience and perhaps considerable time are necessary to obtain points for the graphs in wells that do not adjust themselves quickly to new rates of flow, and this occurs for the most part in wells with low degree of permeability.

These graphs are useful for determining the production that can be expected with back pressure of 400 pounds when the flowing pressure has declined to, say, 500 pounds, which would be about 90 barrels per day. (Figures 6 and 9). After the flowing pressure has declined to 400 pounds, for example, it is necessary, of course, to enlarge the choke opening, and to employ a graph where the discharge pressure is less than 400 pounds, in which case a graph such as that with a back pressure of 200 pounds (Figues 7 and 9) is employed and the production is found to be 130 barrels per day, requiring 1,150,000 cubic feet of output gas per day (Figure 8) to lift this quantity, or a gas-oil ratio of 8850 cubic feet per barrel.

It may be mentioned at this point that data for ordinary production records are not observed with the care and accuracy that would be the case if the engineer

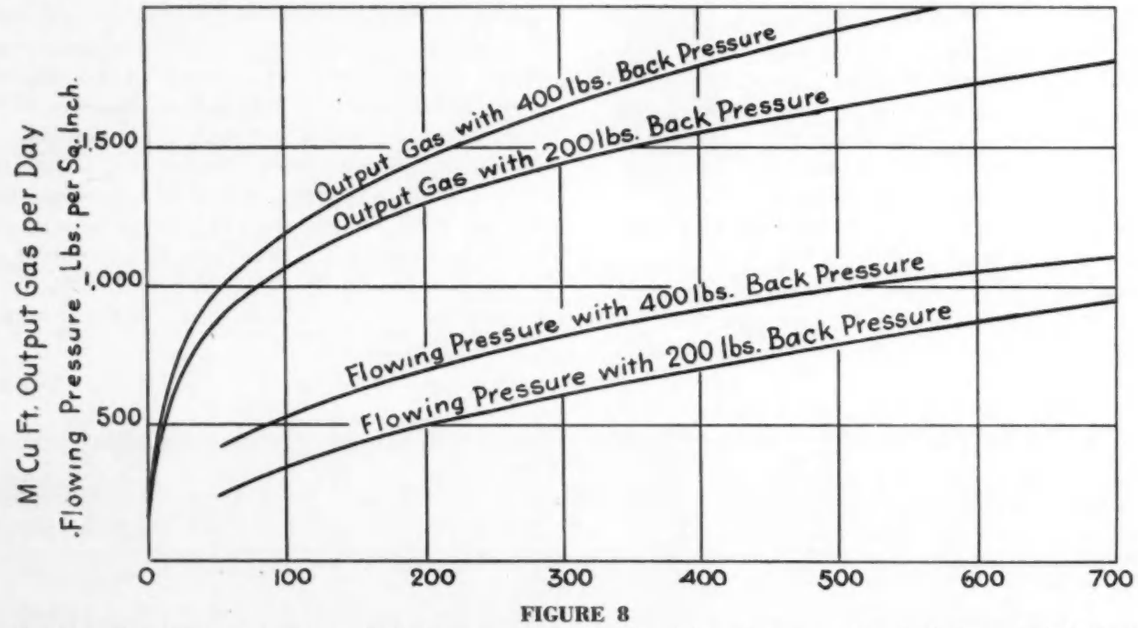

FIGURE 8

Quantity of output gas per day and flowing pressure required to lift a given quantity of oil through 6800 feet of 3-inch tubing with back pressures of 200 pounds and 400 pounds

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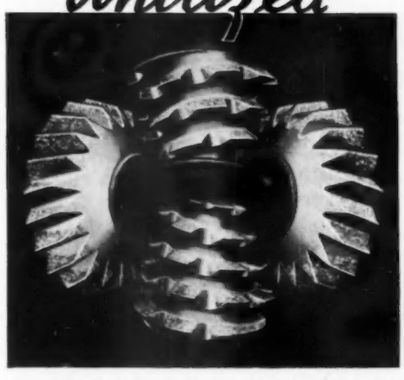

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is making tests to observe these points, and where in case of doubt he would go back immediately before conditions have changed and check production by making another test, or would check pressures of gas volumes by making additional tests. Even with the greatest of care, discrepancies creep into the observations, therefore, the usual data selected from past records of daily production, pressures, etc., should be inspected with the greatest of care and discrimination before using them for the purpose of constructing graphs.

If data are available for constructing graphs for different sizes of eductors, it is then a simple matter to determine whether it will be desirable to change from one diameter of eductor to another, if there is occasion to lift all of the production that is allowed, also to determine the quantity of gas that will be required to lift the oil with this different size of eductor.

With similar graphs it is a simple matter to determine whether the well is producing at a proper rate. For instance, if a point obtained from the production record is that shown at *C*, Figure 7, where the quantity of output gas possible to produce is only 700,000 cubic feet per day, it becomes evident that the well cannot produce at the maximum rate. If the conditions in the well cannot be brought up to the maximum capacity by changing to a choke of larger size, it may be desirable to add input gas to the well from an outside source, in order to provide sufficient gas to bring up the production to maximum capacity. If the data indicate that the production of oil is at a rate that is less than the capacity of the eductor for the quantity of gas being produced, for example, as at point *D* in Figure 7, where production is 200 barrels per day with gas production of 900,000 cubic feet per day, it is evident that the tubing is choked, a result that often happens when deposits of paraffin collect on the walls of the eductor as in Oklahoma City, the Panhandle, Texas, and in Turner Valley, Canada, or when calcium carbonate accretions are deposited, such as happens in the Refugio and Saxet Heights fields, Texas.

In wells flowing naturally, where the reservoir rock is of low degree of permeability, much care must be exercised when opening the choke for the purpose of obtaining higher flowing rates, otherwise the well may unload to the point where the gas in the casing flows out through the tubing, reducing the flowing pressure to a low point, and afterward allows considerable oil or water to rush into the well and load it up, during which time there will be no flow from the eductor, and the well may then run for a long time in heads or refuse to flow at all. Such changes must be made gradually to prevent heading action. Care must also be used in reservoirs where there is a high pressure and much loose sand, not to suddenly unload the well to a very low flowing pressure and allow a rush of oil, gas and sand to cut out the screen and load up the hole to the point where a work-over job becomes necessary to get the well back on production.

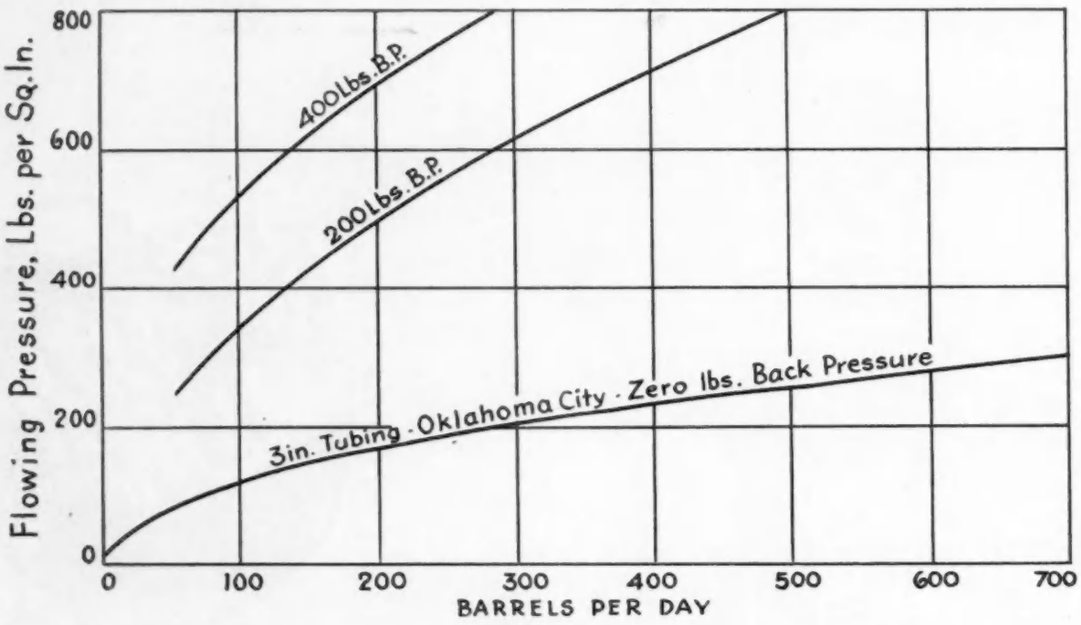


FIGURE 9

Maximum capacity of 6800 feet of 3-inch eductor with given back pressure and given flowing pressure

If it be found that the well will cease to flow when opened to produce at a fairly high rate, that is, when the back pressure is reduced to a minimum, and if it be safe, and is desired to continue the test at such a rate, it may be necessary to add gas from an extraneous source to continue the flowing action in the well.

In the Seminole field, heading action in flowing wells was a definite indication that the wells would soon cease to flow altogether, and haste was then made to build a compressor plant to insure that there would be no time lost in getting the well on gas-lift immediately after natural flow ceased.

[1]Baker, W. L. Phillips Producing Methods Give Exceptionally Good Results in Oklahoma City Area. Pet. Eng., April, 1931, p. 38.
[2]Shaw, S. F. Pet. Dev. & Tech. Vol. 85 (1930) p. 220. Some Observations on Principles Involved in Flowing Oil Wells.
[3]Cromer, Sylvan and Huntington, R. L. Pet. Dev. & Tech. Vol. 136 (1940) p. 79. Visual Studies of the Flow of Air-Water Mixtures in Vertical Pipes.
[4]Shaw, S. F. Gas-Lift Principles and Practices p. 45 (1939) Gulf Publishing Company, Houston.
[5]Ibid. p. 46.

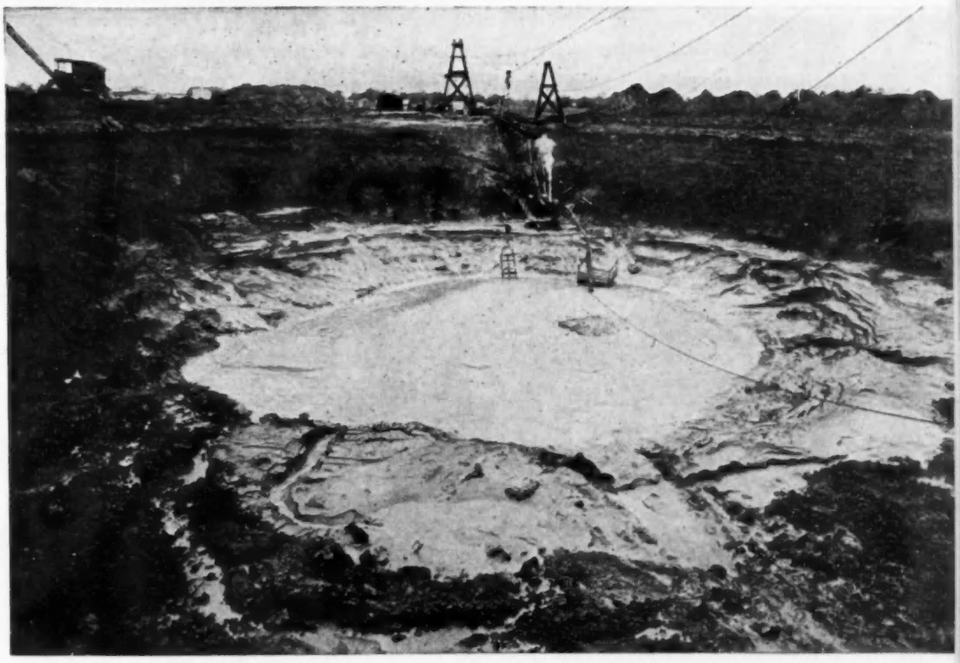
Rig in Center of Crater Helps Kill Wild Well

This is the appearance of the wild well in April, 1941, just before operations to kill the flow of gas and water were started. Although top of the original string of 9-inch casing by this time had been cut away to about 115 feet below the surface of this lake of water, the crater itself is not wide, being shallow for some distance from the shore. The first operation was to pump the water out, and the greatest part of the cratering action around the shores took place during this time. The rate of salt water flow was estimated as being between 500 and 800 barrels per hour.

SETTING up of a drilling derrick in the middle of a well crater and the drilling of over 500 feet of hole were particularly interesting phases of methods used in bringing a well under control late in July after it had blown wild since March 31, 1939. The well, located in the McFaddin field of Victoria County, Texas, was bottomed at 4260 feet and had penetrated several high-pressure gas sands when it blew out. Surface fittings were soon cut out, and the well cratered.

Approximately one year later, M. M. Kinley, oil-well fire fighter, was called in to survey the extent of the damage that had been done to the top of the 9-inch casing that had been cemented between 1200 and 1300 feet. The crater, which had become filled with water and heavy mud, was found to be 38 feet deep, the top of the 9-inch having been cut away to that depth also.

The well continued to blow wild during the next year, and by



After the water had been pumped out, the crater was a pool of a heavy mud and sand mixture out in the center. The centrifugal pump used now is handling the water as fast as it comes to the top. A dragline is tapering off the banks as much as possible, in order to prevent further caving.

An overhead line between two towers across the center of the crater carries equipment across, and lowers it down into the crater to the scene of operations.

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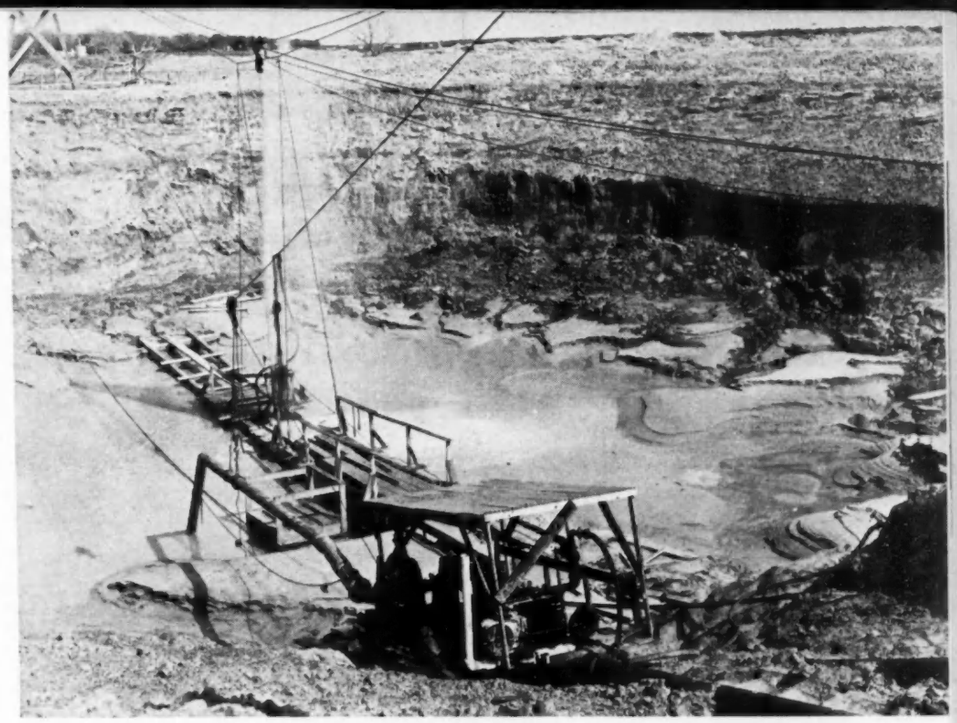
March of 1941 was making large volumes of salt water. Surface formations were becoming saturated, and cratering was more pronounced. It was at about this time that Kinley assumed the job of killing the well. The series of operations that finally led to the setting up of a small derrick in the middle of the crater in order to drill down beside the original hole and then successfully kill the well, are illustrated in the accompanying series of photographs.

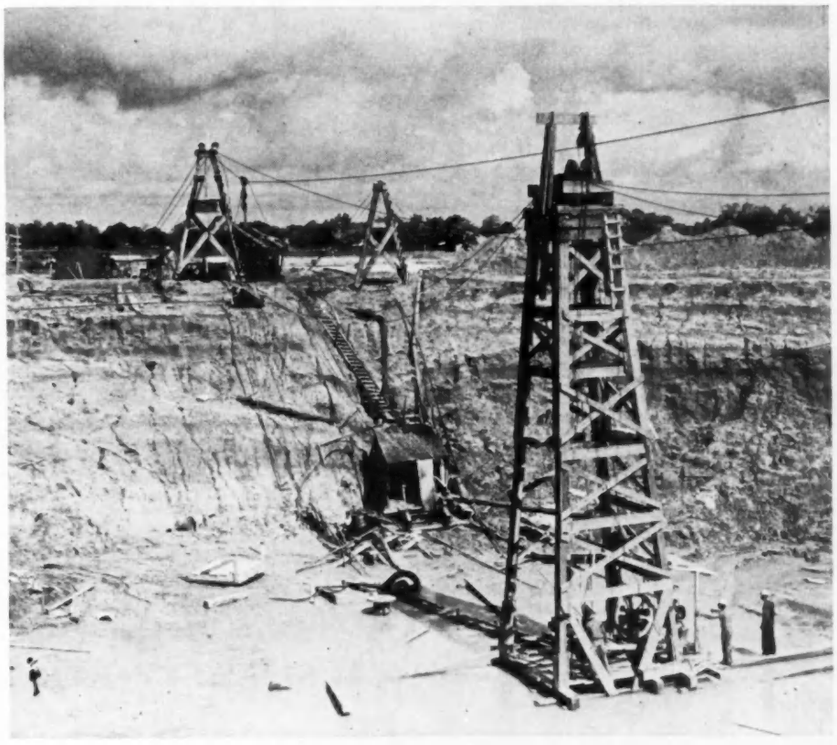
The operations leading to the killing of the well lasted approximately 3½ months, ending the latter part of July this year. Despite the hazardous nature of this particular job, no injuries were suffered by any of the workmen



Since it was impossible to work satisfactorily by the use of the overhead line alone, a cat-walk was built across the crater. The centrifugal pump used for dewatering the crater (foreground), was run by a horizontal steam engine, but operated on high-pressure gas piped to the scene from a nearby well. The 8-inch discharge line was taxed to its capacity to keep the crater emptied of salt water that came to the surface.

The first attempt to control the flow was to drop an 80-foot length of 20-inch pipe over the stub of the 9-inch casing. The spray is the result of high-pressure gas injected through a 2-inch line to hydraulic mud and sand from the 20-inch pipe. The pressure exerted at the bottom of the heavy mud and sand was greater than the 20-inch pipe could stand, however, and it collapsed. A string of heavier 16-inch pipe was then lowered, but it proved impossible to center it exactly over the flow coming from the 9-inch casing. Apparently the 16-inch was but partially over the 9-inch stub, and when the 16-inch conductor pipe was closed off a large part of the flow came up along outside.

Next, a string of 10-inch pipe with a mill on the end of it was brought in and lowered inside the 16-inch in an unsuccessful effort to get the conductor pipe centered over the 9-inch casing. Both strings were cemented in place. The flow of gas and water came up through the 10-inch, but apparently was channeling over to the open lower end of the 10-inch pipe from the 9-inch.



It was then decided to set up a small derrick over the site, and drill down beside the 9-inch casing deep enough to shoot the casing off and cause the well to bridge. Setting up the derrick in the middle of the crater with an 80-foot deep section of mud and sand for the only footing was no easy task. Several very heavy timbers were "floated" on top of the sand, and the derrick built up on that foundation. The derrick often tilted dangerously, making it necessary to suspend operations and straighten it up again. Frequent small, short-lived fires were serious hazards.

The overhead line was used to carry materials and machinery over to the derrick from the shore. A small steam engine, run by high-pressure gas instead of steam, was set up on the floor to turn the rotary table. Hoisting was handled from the edge of the crater by means of an ordinary well pulling unit, the cable running from the hoist to a snatch block on the derrick floor thence over the crown block. Drilling mud of the desired weights was mixed in a pit on the shore, then pumped down to a pit on the rim of the crater from whence another slush pump picked up and circulated it into the well hole.

With a 3-inch drill pipe string, new hole was drilled down beside the 9-inch casing to 200 feet, or over 100 feet below the top of the casing. A 7-inch conductor string was cemented in place at this point, and drilling was continued in a reduced hole. Finally a string of heavy 5-inch pipe was cemented at 517 feet. At this point the hole extended some distance below the 5-inch string, in order to provide room for a 20-quart shot intended to "spring" the hole larger to accommodate a larger shot.

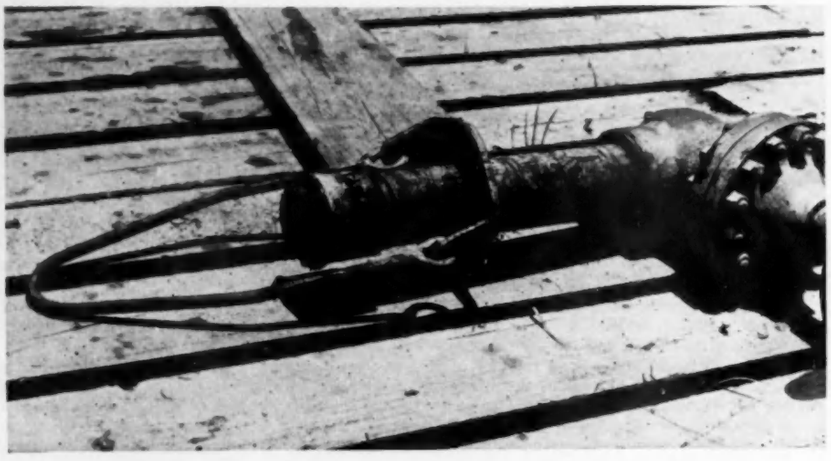
Attempts at cleaning out and enlarging the shot hole following the 20-quart explosion were under way when the flow of gas and water suddenly stopped. Apparently, this small shot had been strong enough to rupture the 9-inch casing, causing the well to bridge and kill itself.

The 5-inch hole was then filled with sand to near the top of the pipe, and capped with a cement plug. The well was perfectly calm after this operation.

Practical Operating Hints for

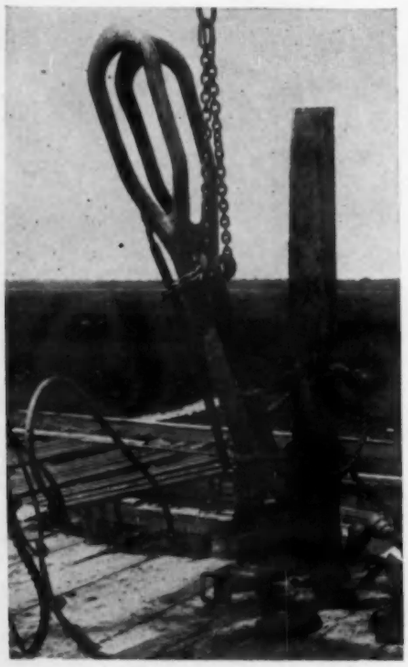
1. MATERIALS HANDLING

Elevator Fashioned from Steel Plate Aids in Moving Heavy Valves and Similar Equipment



Elevator, made from steel plate with a lifting bail, aids in hoisting heavy pieces.

ONE drilling contractor uses an elevator for lifting heavy valves, blowout preventers and similar equipment with the catline. A ½-inch steel plate comprises the body of the lift, with a hole cut through its center of sufficient size to allow passage of a short nipple but not the collar. Two opposite corners of the plate are turned up, with holes cut for attaching the U-shaped lifting bail, which is made of sucker-rod material, its welded eyes connecting with the elevator plate. In the top of the U, a hook is fastened or the cat line is tied for lifting.



Elevator bails are tied to a post while drilling, saving wear on this equipment.

The elevator is used to raise heavy valves by attaching a nipple to run through the hole cut in the plate. As the device is lifted by the cat line, the collar on the free end of the nipple, being of larger diameter than the hole in the plate, is caught, and entire assembly lifted.

The elevator saves times in moving equipment of this type for rigging up, and lessens the damage and danger that might result from a line improperly tied.

2. SAFETY

Elevator Bails Tied At Side of Derrick

ONE Gulf Coast operator lessens hazards to men on the floor and reduces wear on equipment by removing the elevator bails and attendant equipment from hooks while drilling, and securely tying them to a specially erected post at one side of the derrick floor. A steel cable attached to a girder high in the derrick is fastened to the bails when time to remove from the elevator hook, using a regular chain and hook arrangement at the bottom end to facilitate its attachment. The heavy apparatus then is lifted off the hook and swung over to the side of the derrick.

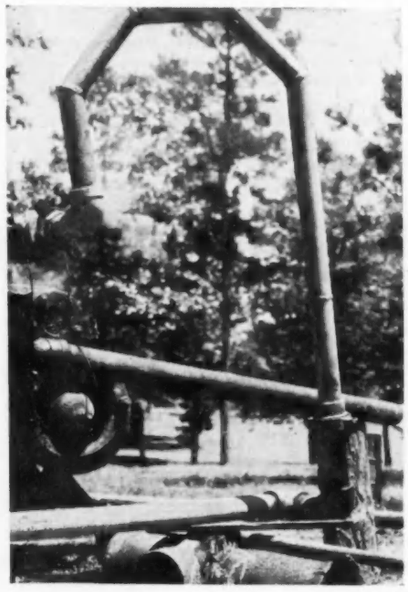
A 2 x 6-inch timber is firmly bolted to the floor in upright position, with the bails tied to it by means of a rope to hold them back until needed, and the floor kept clear of equipment for safety and convenience of the crew. When necessary to pull pipe out of the hole, the rope holding bails to the post is untied, and the bails swung over in position where the elevator hook may be attached for lifting.

3. RIGGING UP

Expansion Provided In Pump Steam Line

AN East Texas drilling contractor adds to the life of his steam lines and fittings by using short nipples of 2-inch pipe in the lines near their connection with the mud pumps.

Several short segments of pipe



This expansion U in steam line adds to the life of the lines and fittings.

are welded together to form part of a loop, or U. As the loop pipe is smaller in diameter than the steam line, it is also less rigid. Ordinary expansion of the pipe caused by the heat of the steam it contains is absorbed by the loop section, allowing more than the usual amount of expansion to take place without movement of the regular steam line and removing the strain of expansion from the line and its collars.

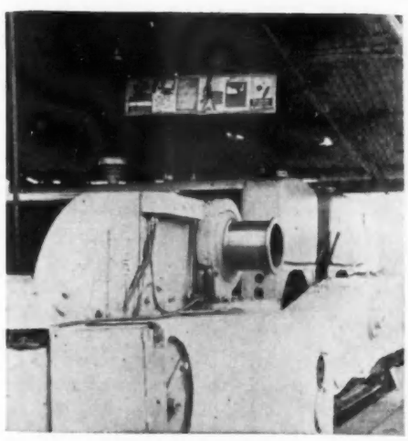
Use of the welded-joint loop section gives increased durability to the lines, and enables the operator to receive more use from them because of the reduced punishment they undergo. Rigging is simplified as flexibility of the loop facilitates making connections.

4. SAFETY

Messages Warn Men On Derrick Floor

SAFETY is carried to Portable Drilling Company's rig operating in the Dill pool, Okfuskee County, Oklahoma, through a bulletin board hung from the engine roof. The board brings safety messages before each member of the crew, constantly reminding him to be careful of all movements and operations in drilling.

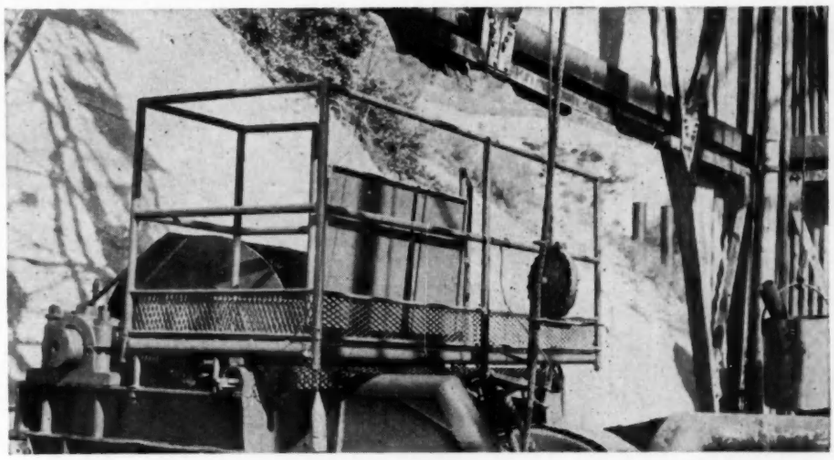
One of the six posters reads: "If You Have Plans for Tomorrow, Be Careful Today." Another describes safe shoes to be worn on the rig.



Safety messages are kept before men on the rig by hanging from engine roof.

5. SAFETY

Railed Platform Atop Sand-Line Reel for Protection of Worker Guiding Spooling



Small platform with removable guard protects the man stationed at sand-line reel.

A COMPANY operating in the Ventura region of California makes it a policy, especially on deep wells, to post a man at the sand-line reel to guide and spool the line properly as it is being pulled out of the hole at high speeds.

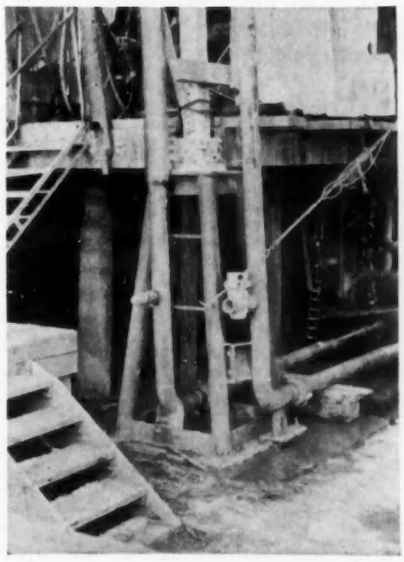
To protect the man as much as possible from injury while performing this task, a small platform with a removable guard railing surrounding it was mounted on the top of these units. The reel is provided with a sheet-metal guard in front of it to protect the man as much as possible from flying fragments or fluid spray. A 1¼-inch guard railing, opened at the far end to a short step-ladder, is easily demountable for transportation.

6. DERRICK BUILDING

Steel Corner Supports Facilitate Skidding

WELLS drilled at Cole's Levee in Kern County, California, are completed and the drilling derrick removed. Instead of pouring permanent concrete piers for each corner of the derrick, one company equips each rig with steel corner supports made of heavy tubular material with a flat base to rest on a portion of the mat surrounding the well.

Rigs are skidded from location to location with the corner supports in place so that drilling mud standpipes attached to the corner near the pumps need not be torn down, but disconnected by breaking out quick-action unions.

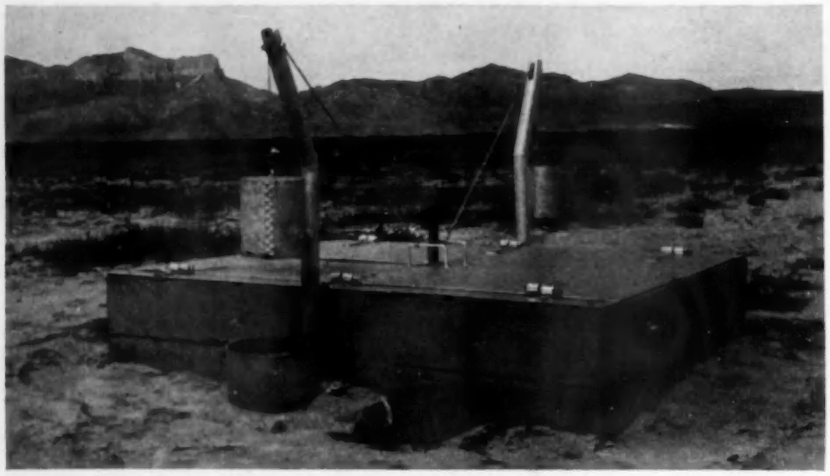


These steel legs for foundation facilitate skidding derrick to new location.

Practical Operating Hints for

1. EQUIPMENT CARE

Counterweights on Steel Gate-Box Covers Aid In Their Opening, and Keep Them Placed



These steel gate-box covers are equipped with counterweights to facilitate opening.

USING heavy steel for gate box covers on its junctions in West Texas, El Paso Natural Gas Company equips these units with cover counter weights. A piece of pipe bent outward at the top is embedded in concrete for stability. The top of the pipe is fitted with a small sheave through which the wire line runs that is connected to the covers at one end and the counterweight at the other. To allow for length of travel of these counterweights, larger pipe is set in the ground, into which the counterweights pass when the covers are raised.

The slope at the top of the sheave support also acts as stop against which the hinged cover rests when open, permitting it to be swung enough past the vertical to guard against accidental closing of the covers.

Providing ratholes for the counterweights shortens the amount of line required for the weights, and enables the sheaves to be kept low enough for easy lubrication.

Drum on the dead-man hitch provides adjustable tension on derrick guy lines.

2. GADGETS

Drum on Derrick Guys Adjusts Tension

AN OPERATOR at Bakersfield, California, provides adjustable tension on the guys for his servicing derricks through use of a simple drum at the dead-man hitch.

The drum, consisting of a 12-inch length of 4-inch pipe, has four or more holes cut through it near one end, to permit a crowbar or heavy bolt to be used as lever for revolving it in its supports.

The drum is carried in a pair of eye-shackles, with the larger eyes formed to fit snugly over the drum but to permit its rotation within them, the small eyes in the offset ends being fitted to the one-inch bolt which fastens them to the eye in the upper end of the dead-man hitch.

The guys are attached at the center of the drum, and taken up or slackened by rotating the drum through the means of a bar through the holes at the drum end. The proper tension is assured by locking the drum at any position by wiring the operating bar to one of the eye-bolts or to an adjacent guy, as desired.

3. PUMPING

Solution Gas Powers Pumping Unit Engine

IN SOME Western Kansas fields, very little if any free gas is produced from the formation. A very small amount, however, is contained in the oil in solution, and breaks out of solution as the oil empties into the tanks.

One operator who drilled a wildcat well some 10 miles from the nearest dry gas fuel or power line, found that to produce the well he would have to haul gasoline until fuel lines could be laid.

The problem was solved, however, by installing a simple arrangement whereby the relatively small quantity of solution gas was collected in the tops of the closed tanks and held at several ounces pressure, to be used in the pumping unit engine.

The tank tops were sealed, and a 4-inch collecting system was installed running from the tank tops to the engine. A tee was placed at a convenient point in the overhead gathering line, with an open nipple leading to within a foot or two of the ground. A galvanized iron open pan two feet in diameter and 12 inches deep then was held up and welded, by means of brackets, to the vertical pipe in such a position that the open end of the nipple came within one or two inches of contacting the bottom of the inside of the pan. This pan, suspended on the end of the nipple, was filled to within an inch or two of the top with water to form a

THE PRODUCTION MAN . . .

liquid seal about the end of the gas line.

In this manner, a steady gas pressure of several ounces, sufficient to run the engine, was maintained regardless of the position of the fluid levels in the tanks. If the production entered the tanks rapidly, raising the level and displacing the gas faster than the engine could handle it, the excess gas merely bubbled up through the water in the pan to escape to atmosphere.

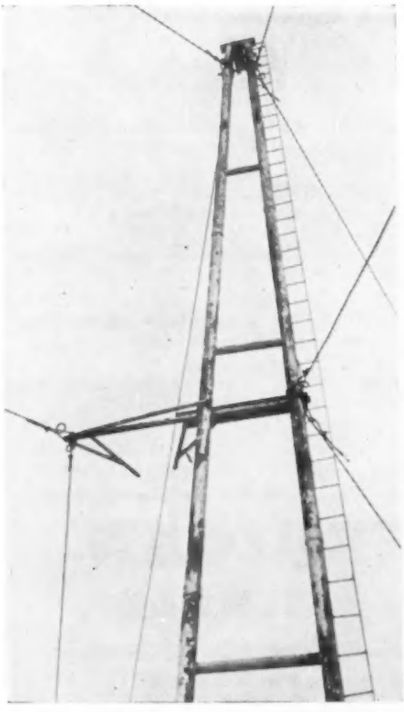
Although some of the water was at times blown out of the pan when a small head of gas would occur in the tubing or oil flow line, the pumper watching the well could easily refill the pan. The installation proved its worth until regular dry fuel lines were extended out to the well.

THE practical operating hints for the drilling rig and production man, appearing in these features each week, are secured from oil fields everywhere and offer suggestions that will help to improve field efficiency and safety. The items give an excellent picture of the remarkable ingenuity being exercised by the operating divisions of the industry. Contributions to these features will be paid for at the rate of $5 for each illustrated item accepted. Address contributions to "The Editor, THE OIL WEEKLY, Houston."

4. SERVICING

A-Frame Equipped to Rack Tubing

PERMITTING stacking or racking tubing alongside the permanent servicing unit, instead of expending time and labor necessary to tail it on the ground, an outboard support is welded to the A-frame, adequately braced and stiffened with two guys, so that the tubing may be guided between the retaining arms and rested on a platform or on loose boards adjacent to the well.



Support welded to A-frame of servicing unit permits stacking tubing alongside.

To provide working space for the operator while stacking tubing, a safety step of corrugated metal is welded to the transverse brace which carries the support. On this narrow platform, with safety belt tail-rope made fast to a leg of the A-frame around one of the rounds in the welded ladder attached to one of the uprights, the derrick man is able to handle the stands of tubing as they are pulled from or replaced in the well.

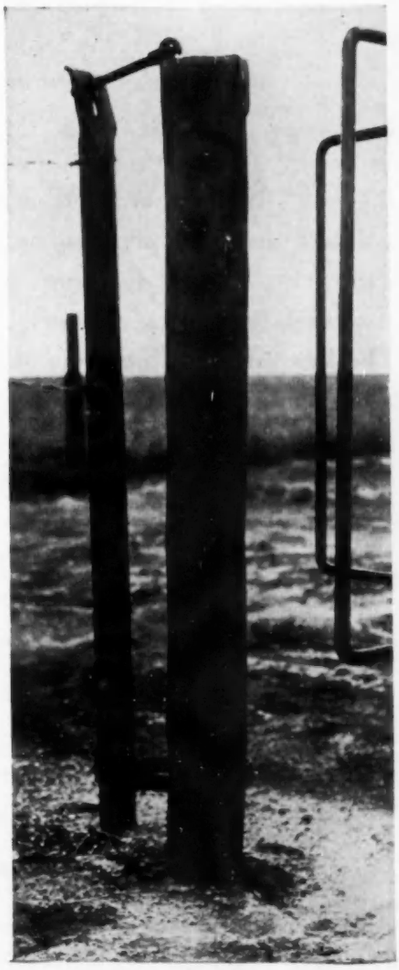
5. TANK BATTERY

Fence Gap at Tank Battery

APPROACH to a tank battery and attendant equipment may be facilitated by constructing a gap in the wire fence that surrounds the site, easily removable at one end to allow pivoting to open a section of the fence and permit driving through the space with heavy equipment trucks or machines for working on separators and tanks.

A sturdy wooden upright driven into the ground comprises both the end post for the fence and also one side of the gateway for walking into the enclosure. A long eye-bolt with a nut on its threaded end is attached to the top of the post by a hook that allows unrestricted movement, and at the bottom a loose-fitting steel strap is fastened. Barbed wire of the fence segment is secured to a post made of two-inch pipe with upper end flattened and slotted to permit attaching free end of bolt on the end post.

The bottom of the pipe is placed inside the strap on the post when erecting the gap section, and when tension is exerted on the wire the long bolt and nut are slipped into the groove on the flattened end of the pipe to hold the gap firmly in place. The section is easily opened by reversing the process and slipping the bolt out of the groove, or, if more convenient, the nut on the end of the bolt is removed. By adjusting position of the nut tension on the wire is altered.



Removable gap in fence enables moving large equipment for repairs to tank battery.

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Oil Company Camp Is Haven In Swampland

By GORDON B. NICHOLSON, Staff Writer

DEEP on the Mississippi River delta below New Orleans, a marshy Louisiana wasteland that has been transformed into an elevated dry-land haven some 12 acres in extent, houses the modern Potash camp, office, and center of regional drilling activities for Humble Oil & Refining Company. The machine-made and man-made domain rises above semi-flooded lowlands to become what is reputedly the highest land in Plaquemines Parish, offering protection both against river rises and tidal waters from nearby Gulf of Mexico.

The locale of the camp is interesting both in topography and physiography. The Mississippi flows its mighty way to form the border of the western edge of the campsite as it hurries toward the Gulf but 60 miles distant. By peculiar trickery, nature's forces send the water down this long route while in that region the open waters of bays connected directly with the Gulf are only two miles distant, washing the eastern edge of the narrow strip of land that confines the river within its banks as it nears the end of its long journey. During early development of the field discovered by Humble Oil & Refining Company underneath the east bank and designated Potash, canals dredged from the river into the field for transportation furnished an ever increasing menace because of the possibility of the river cutting new channels across the strip to reach tidal waters such a short distance to the east. Company engineers devised the scheme of digging the canals from the bay waters into the field to eliminate their entrance from the river side, in this way circumventing possibility of changing the course of the river, and with this plan the idea for a company camp was developed.

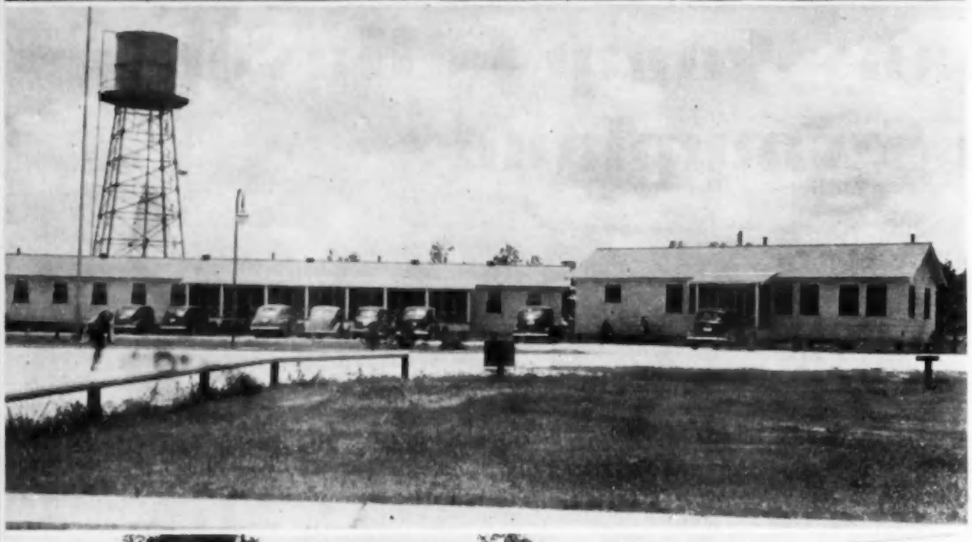
The long levee down the east bank ends 4½ miles below the small town of Pointe-a-la-Hache in a lowland area 12 miles long, known as the Bohemia spillway, designed years ago as outlet to allow flood waters of the Mississippi to have easy access to the sea by crossing the narrow land strip to the east to enter open tidal waters of Uhlan and American Bays. The Potash Oil field is about two miles south of the levee end in the spillway area. It was decided to construct the camp at the termination of the levee where it is accessible by road, with canals dredged to furnish routes to the oil fields, the difficulty being that the terrain at the selected campsite was entirely or partially submerged marsh land and apparently unfit for reclaiming.

Built With Hydraulic Dredge

The first project and the one upon which future success of the undertaking depended was the task of building an elevation of sufficient body and area to support buildings and necessary housing for the camp. The thought of attaining this objective brought expressions of skepticism to the operators, but once their plans were formulated there was no discouragement to the perpetrators of the undertaking. Large hydraulic dredges moved to the location pumped mud from the surrounding marsh lands, digging canals to the oil field and forcing the mud on the site chose in an effort to build up the location to a height of 10 feet above sea level, approximately 6 feet higher than the surrounding ground. As a preliminary step, a levee or retaining wall was built around the site and was provided with an open corner for draining water from the soft mud, while the inside area was filled with thousands of tons of mud. To obtain firmness in the soil, it was harrowed frequently for six months to allow water to drain, permitting the top soil as well as the mud underneath to dehydrate and become solid, a painstaking procedure as company engineers estimate the rate of water flow through the mud to be only two or three feet daily.

Canals formerly used to reach the oil field were blocked off from their river junction by earthen bulkheads erected at the old entrances, and new canals were dredged and opened into the bays to the east, replacing with salt water the original fresh water in the canals supplied by the river. During floods on the lower Mississippi, waters take the easy course to the Gulf by flowing across the canals and oil field, inundating all land in the area com-

A row of company houses for employes, provided with electric wiring, concrete sidewalks, shell streets, modern plumbing.



Spacious quarters at left furnish living accommodations for single men, while boarding house at right serves family style meals.

A large earthern reservoir stores sufficient water to care for three-month period during which river is salty. Water is conveyed from the tank to a modern purification system.

Canal leading to oil field terminates at boat house near the combined office and warehouse. The hydraulic fill on which camp is constructed was made from mud pumped while dredging canals.

prising the 12-mile Bohemia spillway. During such periods, the campsite, safely elevated, is the southernmost point of safety from high waters, with additional especially dredged canals conducting flow of water around the camp into spillway canals to relieve erosive cutting of the hydraulic fill around the sides exposed to the running water.

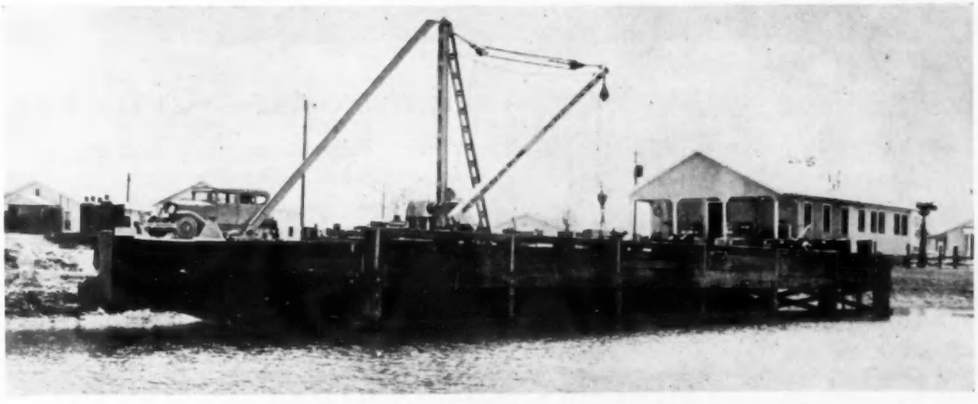
After the fill was declared by Humble engineers to be suitable for habitation, a camp than ranks with the best in furnishing comfort and safety for its inhabitants was constructed. A large office and warehouse and a spacious bunkhouse were the first buildings erected, both structures set on long piling for solid foundation. All subsequent buildings were also placed on piling from 40 to 75 feet in length because of unstable subsurface soil, and include both company 5-room bungalow type homes, other dwellings privately owned by employes, a community house, boarding house, and boat house. All company buildings are constructed of fireproofed materials and are furnished with attic fans for ventilation, with electricity for the entire camp supplied by a public power line. Telephone communication is provided to the camp, and the telephone system is extended to allow direct contact with rigs in the field, while the company pipes natural gas from the field to the camp for heating. All windows and porches are heavily screened to keep out mosquitoes and other insects that infest the area because of its tropical climate, while modern plumbing facilities add to comfort and sanitation in the homes. In addition to the plumbing provided the camp, other sanitation features also receive careful attention. Behind the houses, individual incinerators are erected for garbage disposal, while concrete sewer pipes placed underground when camp was constructed convey sewage to a septic tank at lower end of camp before final ejection into the canals.

The supply of drinking water for the camp is a noteworthy achievement, its purification being similar to the system employed in New Orleans. Water from the Mississippi is used, pumped from the river for storage in a large earthen reservoir which holds a sufficient quantity to last three months during summer or fall when rainfall is scarce and salt water from the Gulf works upstream. Current requirements are constantly met by a treating and storage system, water being conveyed directly from the large reservoir to a small building housing a compactly-arranged purifying plant which removes sediment and treats water with lime, sodium hypochlorite, and other chemicals for final purification. The clean fluid is then pumped into a 100-barrel tank set atop a 65-foot tower which furnishes ample pressure on the lines for use in the camp.

Adequate precautions are taken to assure safety against fire, with an automatic fire alarm system causing a siren on top of the water tower to sound warning of a conflagration to inhabitants and to the voluntary fire department. Four fire-houses are distributed at strategic locations around the camp, all painted a brilliant red and housing fire fighting equipment which includes hoses of sufficient length to reach any of the camp structures from one of the numerous fire plugs provided. Night safety is enhanced by installation of street lights near the homes, and flood lights protect company equipment from prowlers. Excellent shell base streets allow easy transportation about the camp regardless of weather, constructed of materials hauled from New Orleans, while concrete sidewalks facilitate walking. In front of the community hall a small parkway beautifies the camp, having a flagpole and cannon from old Fort Jackson a few miles down the river to add to its distinction. Attention is given by the inhabitants of the camp to planting grass and flowers as an aid to its attractiveness.

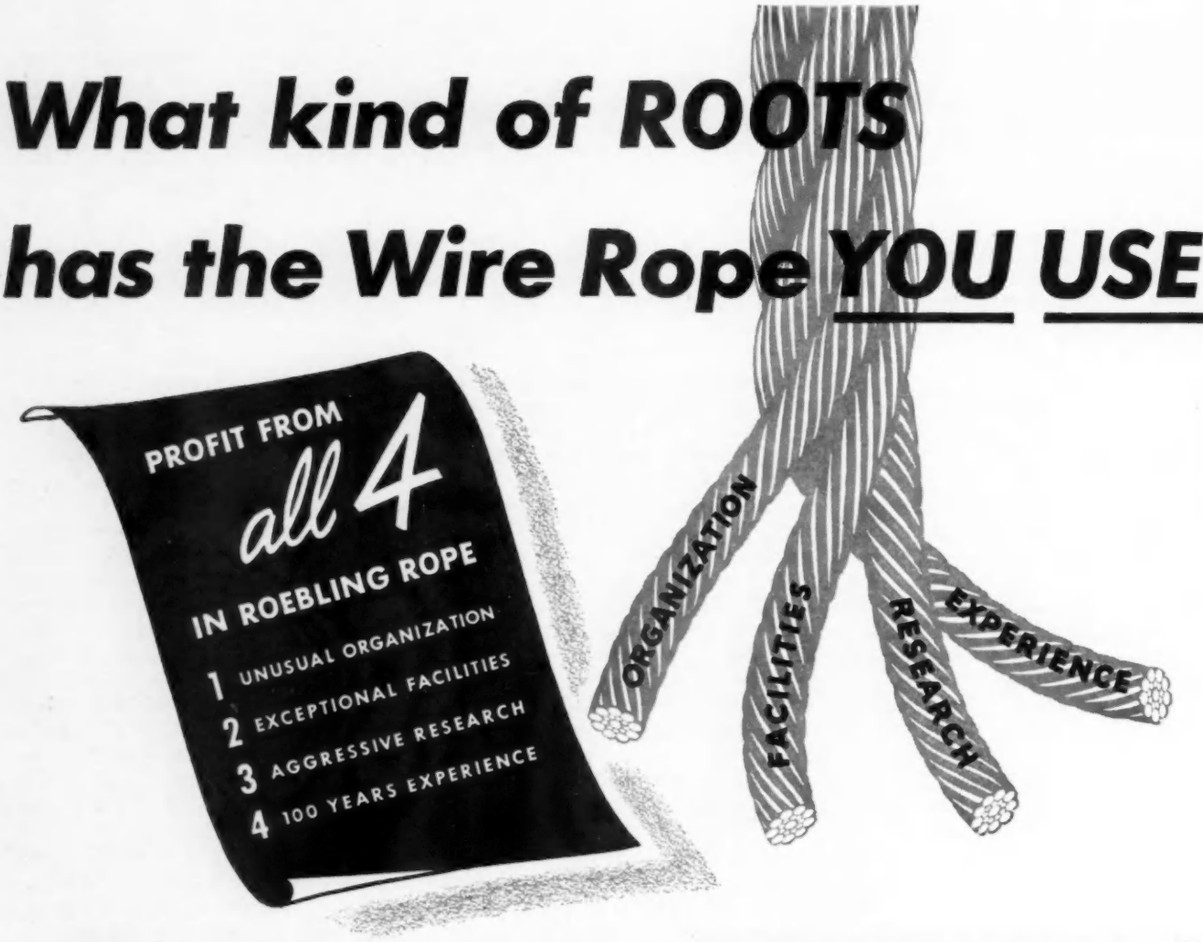
The camp is reached by a hard-surfaced road running to Pointe-a-la-Hache 49 miles down the east bank of the river from New Orleans, and a shell road continuing along top of the levee to its termination where the Potash Camp is located. An alternative all-weather route down the west bank is also used, with a State-operated ferry running from Pointe-a-la-Hache to permit crossing the river. Equipment for the camp and oil field below is hauled in by truck and transported to the field by boat or barge from the loading dock built directly behind the office and equipped with cranes and other lifting apparatus for loading on barges kept in the canal. The main waterway to the oil field enters the camp near the office, and at its terminal Humble Oil & Refining Company constructed a boathouse for the numerous speed boats and crew boats which are maintained at the camp for access to the field.

The camp celebrated its first birthday on July 13, and its neat buildings and modern equipment constitute a permanent reminder of the progress of modern oil development in the face of obstacles. Man and machine have established comfortable dwellings in this wilderness as challenge to nature's forces in developing this oil reserve near the mouth of the big Mississippi.



Loading dock where trucks deposit equipment for loading on barges to transport to oil field

What kind of ROOTS has the Wire Rope YOU USE?



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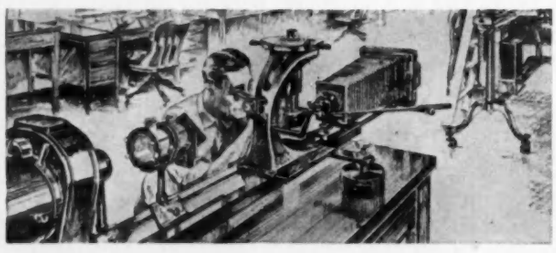

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HIGHLIGHTS IN THE WEEK'S NEWS

Oil for Britain

Texas Commission Voids Plan for Gift Ceremony

The Texas Railroad Commission has postponed indefinitely its ceremony for delivering to the British the warrants for oil which Texas producers have given. The ceremony was set for Monday, August 18, but not enough oil was given, apparently, to make a good showing.

Commissioners Jerry Sadler and Olin Culberson said Friday that they did not know exactly how much oil had been offered. They pointed out that the warrants attached to the forecast tenders were first presented to the pipe line companies by the producers, and since the pipe line companies had declined to accept them, these warrants never reached commission offices for checking.

Operators who still wish to give their oil and had filed warrants were permitted to go ahead.

The commission said that the statewide proration hearing set for Monday would be held, only the gift ceremony being postponed.

In a telegram to President Roosevelt announcing the postponement with regret, Sadler and Culberson said that the delay "has been necessitated because of obstinance on the part of certain oil companies who insist on tying up this meritorious plan with camouflaged legal technicalities. Efforts have been made by certain companies to stifle this program. It is their desire to fatten their coffers with the tax payers' money that pays handsomely for huge lend-lease and other vital national defense contracts. They wish to stalemate the plan with cries of 'red tape,' when in reality both state and federal governments have placed their approval on the program."

The Oil-for-Britain proposal was presented at the last statewide proration hearing by R. H. Cuyler, representing John F. Camp, San Antonio oil operator who originated the program. At that time Cuyler said that the "plan" was not ready and that Camp would like to have it set for hearing. The commission agreed to set it for hearing, but the hearing was never held despite the fact that several producers asked for it to iron out defects in the program as presented by the railroad commission. No mention of these facts was made in the telegram to the president or the statements by the commissioners.

Asked whether pipe line companies could be punished for refusing the forecast tenders, Sadler said that this had not yet been determined.

Ickes Not Behind Oil For Britain Gift Day

There is no information in oil administration circles on the controversy in Texas over the proposal to donate one day's production to Britain.

He revealed that he had received invitations from the Railroad Commission to be in Austin and from former Governor (now Senator) W. Lee O'Daniel to be in Corpus Christi on the same date; had written them to get together, and has heard nothing further.

"I have had nothing to do with it from the very beginning," he said in response to a question whether he had suggested the donation. "I ever inspired the idea—I never thought of it, in fact."

Pipe Lines

Picture Map of Defense Pipe Line Being Delivered

Aero Exploration Company, Tulsa, has completed aerial survey for the national defense cross-country pipe line which will deliver 250,000 barrels daily to the Atlantic seaboard area from Texas and the Mid-Continent.

More than 2500 pictures were taken from two planes covering the 1820 miles of proposed line with an area from 3 to 6 miles in width. When all are assembled, total length will be 1500 feet. Already 1000 photographic miles have been printed, assembled and delivered to the oil companies backing the line. It is sectionalized in order to facilitate obtaining right-of-way and engineering work.

Gulf Enlarges West Texas To Gulf Coast System

Gulf Refining Company, pipe line division, has authorized installation of four additional loops, aggregating 26 miles of 10-inch pipe, between Midland and Ranger stations on its West Texas to Port Arthur on the Gulf Coast carrier. Pipe is scheduled for delivery early in September. The new units will step up the capacity 5000 barrels, giving the company an outlet for 65,000 barrels daily from the Permian Basin.

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Gulf Enlarging Eastern Shipping Facilities

Gulf Refining Company, Tulsa, is engaged in laying 13 ten-inch loops totaling 203 miles in length, on its trunk line from Glennpool, Oklahoma, to Dublin, Indiana.

Williams Brothers Corporation has completed the first 16-mile unit from Jenks to Perryman and is working upwards from Perryman to Strang in Northeastern Oklahoma. B. & M. Construction Company, Oklahoma City, is constructing a 12-mile loop between Anderson and Monett, southwestern Missouri, and between Monett and Stratford.

Increased capacity from 45,000 to 55,000 barrels will be filled by Kansas, Oklahoma and East Texas crude.

At Dublin, Indiana, Gulf's line diverts in four channels, going to Dayton, Cincinnati, Toledo and Pittsburgh.

Looping Oklahoma Line Moves East Texas Crude North

Oklahoma Pipe Line Company has started construction of loops on its 147-mile 8-inch oil line from DeQueen, Arkansas, to Glennpool, Oklahoma. Twelve miles of 8-inch loops will effect capacity increase from 35,000 barrels to 40,000 barrels daily. When first put in operation during early part of 1941, the line carried 24,000 barrels daily; taking 20,000 barrels of East Texas crude and 4000 barrels of North Louisiana and Southern Arkansas crude.

Capacity was considerably stepped-up by replacing smaller pipe pumps. Looping will start at the Red Oak, Oklahoma, and move southward.

Ajax Pipe Line Company has increased capacity of its dual 10-inch from Glennpool to Wood River, from 50,000 barrels to 62,000 barrels. This line is now running at peak load.

New Line Will Start Oklahoma Oil on Way to Indiana Plant

Rock Island Refining Company, Duncan, Oklahoma, will construct a 30-mile 6-inch oil line from the Cement field, Caddo County, to join Oklahoma Pipe Line Company's System at Knox, in Grady County, Oklahoma. Over 2500 barrels daily will be moved to Glennpool and thence north by Ajax Pipe Line Company to Wood River, Illinois, and thence by Illinois Pipe Line Company artery to Rock Island, Indiana. At Rock Island, the firm is constructing a new 6000-barrel refinery which will be completed by middle of September. Original intent was to serve this refinery with Illinois oil.

Sinclair Completes Gasoline Line, Fort Worth to Dallas

Sinclair Refining Company last week completed a 31-mile 3½-inch welded gasoline line from Fort Worth refinery to Dallas. The line was tested with compressed air. It will not be placed in service for some weeks, as the company is erecting a new bulk station on the Dallas terminus.

Some Product Prices Higher; Pennsylvania Crude Raised

In the oil industry, as in other lines, the government is encountering difficulty in holding down prices, under present inflationary conditions; and the past week brought increases in prices of some petroleum products as well as an advance of 23 to 25 cents a barrel in postings of Pennsylvania grade crude oil, while Gulf Coast refiners continued to negotiate with the Office of Price Administration and Civilian Supply for lifting of the ceiling placed by that agency on the wholesale price of gasoline in their district.

Led by Gulf Oil Corporation, marketers in Texas generally advanced the tank wagon prices of gasoline in that state ½ cent a gallon, but independent jobbers complained that the increase did not provide needed relief for them, as they faced extinction by narrow differentials between tank car and tank wagon prices. Through the Gasoline Dealers Association of Texas, they contended that at least a 1 cent advance in tank wagon prices, instead of the ½ cent increase, was needed.

Socony-Vacuum Oil Company, Inc., effective August 13, advanced most of its posted prices for No. 2 and No. 3 fuel oils 3/10 cent a gallon and for kerosene 1/10 cent, all methods of delivery, throughout New York state and New England.

The increase of prices of Pennsylvania grade crude, effective August 14, was the fifth this year and the seventh within 9 months. Following the advance, the prices are well above the 1937 highs, the top grade being practically $3 a barrel. The revision reflected the efforts of refiners to obtain additional supplies to meet the increased demand for lubricants, prices of which have climbed to such extent that the government has established ceilings for neutral oils.

Bradford-Allegany grade crude was increased 23 cents a barrel on August 14 to $2.98. Southwest Pennsylvania crudes were raised 25 cents to $2.65. Oils in Eureka Pipe Line (West Virginia) were raised 25 cents to $2.59 a barrel.

Since the middle of November last year, the prices of Pennsylvania crudes have been advanced $1.13 to $1.15 a barrel, two increases of late last year having amounted to 15 cents each, while raises this year have been in the amounts of 15, 10, 15, 20 and 23-25 cents.

The increases have reflected primarily the fact that production of Pennsylvania grade crude has not kept abreast of refinery demand, a situation that has resulted naturally in withdrawals of crude from storage and in efforts of plant owners to stimulate production by payment of higher prices. Production in the first half of this year was nearly 10 percent smaller than that in the similar period last year; and although refinery runs were down about in proportion, they exceeded output of the wells during the period. At the end of June, according to the National Petroleum Association, stocks of Pennsylvania grade crude were down to a new low of 3,835,369 barrels, from 4,170,722 a year previously, a decrease of 335,353 barrels for the period.

The present strong demand for Pennsylvania grade crude reflects the current heavy consumption of lubricants, due to the great industrial activity and the accompanying wide use of automobiles, both industrial and automotive uses of lubes being large, while exports also have been comparatively heavy in recent months.

Neutral oils have been in especially large demand in Western Pennsylvania, as emphasized by the placing of ceilings on prices of those oils by the OPACS; and current production and stocks are so light in relation to market requirements that some refiners have been obliged to prorate their supplies among their regular customers, the result being that very little material has been available in the open market. Actually, as brought out by the OPACS, comparatively small quantities of the neutral oils have been sold and bought at the highs of quoted prices, while much of the contract business has been transacted at prices more in line with the ceilings that have been established.

It is to be expected, however, that additional increases of the prices of lubricants will be necessary to compensate for the higher prices to be paid henceforth for crude oil.

Trends of Operations and Changes in Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1938:						
November 12	3,243,250	3,180,000	273,394,000	[6]67,551,000	34,175,000	120,491,000
December 10	3,245,100	3,150,000	[2]269,509,000	68,687,000	32,068,000	118,711,000
1939:						
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,085,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[3]278,607,000	86,216,000	26,167,000	108,597,000
August 5	[3]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 26	[6]1,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
October 7	3,435,850	3,505,000	231,564,000	[6]71,152,000	38,549,000	114,397,000
October 21	3,771,550	[2]3,650,000	[3]229,127,000	72,122,000	39,358,000	115,060,000
1940:						
January 27	3,611,600	3,470,000	237,339,000	87,914,000	27,407,000	103,015,000
February 24	3,732,100	3,490,000	240,836,000	96,719,000	25,390,000	103,419,000
March 30	3,841,250	3,585,000	250,561,000	101,370,000	23,778,000	105,081,000
April 20	3,858,550	3,535,000	254,881,000	[1]102,817,000	24,779,000	103,323,000
April 27	3,845,250	3,555,000	256,670,000	102,452,000	24,997,000	102,552,000
May 25	3,835,650	3,580,000	259,330,000	100,297,000	28,356,000	104,015,000
June 22	3,846,450	[2]3,690,000	260,891,000	97,276,000	32,751,000	104,683,000
June 29	3,639,550	3,625,000	262,059,000	95,142,000	33,590,000	104,486,000
July 27	3,690,400	3,555,000	262,579,000	90,173,000	38,981,000	105,924,000
August 31	3,501,350	3,575,000	265,865,000	85,393,000	44,766,000	108,774,000
September 28	3,799,950	3,600,000	263,609,000	82,273,000	47,986,000	108,450,000
October 26	3,640,300	3,565,000	262,746,000	80,891,000	[1]48,893,000	108,475,000
November 9	3,584,200	3,510,000	261,631,000	[6]79,847,000	48,408,000	107,687,000
November 30	3,335,050	3,510,000	262,679,000	80,284,000	46,212,000	106,618,000
December 28	3,385,500	3,585,000	261,552,000	83,274,000	42,266,000	102,620,000
1941:						
January 25	3,599,100	3,625,000	260,093,000	88,762,000	39,039,000	100,297,000
February 22	3,629,650	3,590,000	261,783,000	95,812,000	34,381,000	98,631,000
March 1	3,632,250	3,585,000	263,176,000	96,917,000	33,725,000	97,510,000
March 29	3,746,550	3,625,000	266,187,000	[2]99,727,000	29,949,000	96,152,000
April 26	3,726,850	3,675,000	266,149,000	96,647,000	29,543,000	94,732,000
May 31	3,786,100	3,699,000	262,356,000	93,845,000	33,524,000	92,757,000
June 7	3,816,700	3,880,000	260,956,000	92,522,000	34,305,000	93,384,000
June 14	3,822,750	3,755,000	260,464,000	92,478,000	35,060,000	93,182,000
June 21	3,857,600	3,845,000	259,142,000	91,916,000	35,736,000	93,281,000
June 28	3,847,250	3,930,000	259,399,000	91,461,000	35,732,000	92,896,000
July 5	3,658,200	3,745,000	258,070,000	90,218,000	36,925,000	92,635,000
July 12	3,870,750	[1]4,090,000	255,567,000	89,561,000	37,812,000	92,699,000
July 19	3,676,050	3,805,000	254,048,000	87,920,000	38,732,000	93,091,000
July 26	3,869,950	3,920,000	252,728,000	86,945,000	40,197,000	93,855,000
August 2	3,695,250	3,845,000	252,535,000	86,779,000	41,433,000	94,800,000
August 9, 1941	[1]3,911,950	3,835,000	.....	86,022,000	42,136,000	95,412,000
August 9, 1940	3,475,300	[6]3,508,000	[4]264,297,000	87,681,000	40,865,000	106,487,000
Change in past year	+12.8%	+9.3%	—4.4%	—1.9%	+3.1%	—10.4%

[1] All time peak. [2] Peak for year. [3] Lowest since April, 1922. [4] Stocks, August 3, 1940.
[5] Lowest since October, 1922, due to shut down of six Mid-Continent states. [6] Lowest for year.
[7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California.
[8] August, 1940, daily average.

New Record for Crude Oil Production Is Established

United States crude oil production rose to a new all-time high in averaging 3,952,400 barrels daily during the week ended August 16. The output was 53,875 barrels greater than that in the previous week and 12,400 barrels in excess of indicated market demand for domestic crude in August, as estimated by the Bureau of Mines.

The increase reflected larger production in several of the prominent producing states, including Texas, California, Oklahoma, Louisiana, and Kansas.

Noteworthy was the sharp rise of Kansas output to a new all-time peak of 250,700 barrels daily. That was 10,000 barrels above estimated demand and 25,000 barrels more than output in the previous week.

Texas was up about 5000 barrels to 1,447,100 daily, and under the operation of the state's shutdown system, output

was for the week about 87,000 barrels a day above market demand.

California increased over 10,000 barrels to 655,300 daily, and was 14,000 above market demand.

Oklahoma rose about 5000 barrels to 418,200 daily but was about 75,000 under indicated demand.

Illinois was practically unchanged at 353,500 barrels daily and failed by about 35,000 barrels to fulfill estimated market demand for Illinois crude.

Louisiana averaged 329,100 barrels daily, 8500 more than in the previous week and about 5000 more than indicated demand.

Refinery Operations High; Oils Being Moved Steadily

The industry continues to operate refining facilities at exceptionally high rates, and still the shortage of tankers has not interfered seriously with movement of oils.

Crude-oil production was boosted to the highest rate in the history of the industry during the week ended August 9, when output averaged 3,911,950 barrels daily, American Petroleum Institute figures showed.

Refinery runs were slightly smaller than in the previous week, but plants were operated at almost 90 percent of capacity, and consumed 3,835,000 barrels of crude daily. Those on the East Coast processed 90.6 percent as much as they were capable of handling, indicating that supplies of the raw material in that area continued available in comparatively large volume, if not in full

Wholesale Prices of Refined Products in Principal Markets

REFINED GASOLINE	Range Last Week (Cents a gal.)		Changes from Week Before	
Oklahoma Refineries:				
60 Octane and Under	5 1/4	5 5/8	...	...
63-66 Octane	5 5/8	6	...	...
72-74 Octane	6	6 3/8	...	...
80-82 Octane, Ethyl	6 1/2	7 1/4	...	...
Mid-Western Tank Car:				
60 Octane and Under	5 1/8	5 5/8	...	...
63-66 Octane	5 5/8	6	...	...
72-74 Octane	6	6 3/8	...	...
80-82 Octane, Ethyl	7 3/8	7 3/8	...	...
New York Harbor:				
68-70 Octane	8	8	...	—1/4
72-74 Octane	8	8 1/2	...	...
Min. 80 Octane, '39 Research	8 1/2	9	...	...
Gulf Coast:				
60 Octane unleaded	5 1/8	5 5/8	...	...
65 Octane unleaded	5 1/2	5 7/8	...	...
68 Octane unleaded	6	6 1/8	...	+1/8
70 Octane unleaded	6	6 1/4	...	...
72-74 Octane leaded	6	6 1/4	...	...
Min. 80 octane, '39 Research	6 1/4	6 1/2	...	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	3 3/4	3 3/4	+1/8	...
F.O.B. Br'kenr'ge, Tex.	3 1/4	3 1/2	...	+1/4
KEROSENE				
Oklahoma Refineries:				
41-43 water white	4 3/8	4 3/4	...	...
42-44 water white	4 1/2	4 7/8	...	...
Mid-Western Tank Car:				
41-43 water white	4 3/8	4 3/4	...	...
42-44 water white	4 1/2	4 7/8	...	...
New York Harbor	5 1/4	5 1/2	...	...
RANGE OIL				
At Oklahoma Refineries	4	4 3/8	...	...
In Mid-Western Market Group 3, basis	4	4 1/4	...	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 straw	3 1/2	4 1/4	...	...
No. 3	3 3/8	3 5/8	...	...
Mid-Western Tank Car:				
No. 1 white	3 3/4	4 1/8	...	...
No. 3	3 1/4	3 1/2	...	...
New York Harbor:				
No. 1	5 1/4	5 1/2	...	...
No. 3	4 7/8	4 7/8	...	...

HEAVY FUELS	Range Last Week (Per Bbl.)		Changes from Week Before	
Oklahoma Refineries:				
No. 6	$0.80	$0.85	...	...
Mid-Western Tank Car:				
No. 5	.85	.85	...	...
No. 6	.85	.87 1/2	...	...
New York Harbor:				
No. 5	1.65	1.75	...	...
No. 6	1.35	1.35	...	...
BUNKER C FUEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$0.85	$ .95	...	...
New York Harbor	1.35	1.35	...	...
DIESEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$1.55	$1.55	...	...
New York Harbor	2.00	2.00	...	...
Los Angeles Basin 27 gravity	1.05	1.15	+.05	...
LUBRICATING OIL (Cents a gal.)				
Oklahoma Refineries:				
Bright Stock, 150-160 viscosity at 210° 10-25 pour test	20 1/2	21 1/2	...	...
Neutral oil pale No. 3 Color, 150 viscosity at 100°, 0-10 pour test	12 1/2	12 3/4	...	...
Western Pennsylvania:				
Bright Stock, 145-155 viscosity at 210°, 25 pour test	25	26	...	—1
Neutral Oil No. 3 Color, 150 viscosity at 70°, 25 pour test	31	35	...	...

CRUDE OIL PRODUCTION AT NEW HIGH

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (August)	State Allowable (Barrels Daily in August)	BARRELS DAILY FOR WEEK ENDED Aug. 9	Aug. 16
TEXAS—				
Texas Panhandle			80,650	80,400
North Texas			100,650	99,850
West Central Texas			29,900	30,350
West Texas			274,050	271,150
East Central Texas			82,950	83,800
East Texas Field			370,600	370,200
South Texas			219,550	219,450
Texas Gulf Coast			283,950	291,900
Total Texas	1,361,600	1,355,502§	1,442,300	1,447,100
CALIFORNIA—				
Long Beach			38,800	38,200
Midway-Sunset			55,400	50,300
Kettleman Hills			36,300	38,700
Wilmington			85,400	86,500
Others			428,900	441,600
Total California	641,000	610,000*	644,800	655,300
OKLAHOMA—				
Oklahoma City			86,550	87,250
Seminole Area			107,250	107,750
Others			219,675	223,200
Total Oklahoma	492,400	415,000	413,475	418,200
ILLINOIS—				
Salem			81,200	80,800
Louden			60,500	61,200
Centralia			9,500	9,400
Other New Pools			190,300	190,500
Old Pools			12,800	11,600
Total Illinois	390,100		354,300	353,500

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (August)	State Allowable (Barrels Daily in August)	BARRELS DAILY FOR WEEK ENDED Aug. 9	Aug. 16
LOUISIANA—				
North Louisiana			79,100	79,250
South Louisiana			242,500	249,850
Total Louisiana	324,500	325,081	321,600	329,100
KANSAS	240,800	242,800	225,250	250,700
NEW MEXICO	112,900	112,900	110,400	110,400
EASTERN STATES—				
Pennsylvania Grade	74,500		75,400	72,100
Others, Eastern	24,400		18,500	18,500
Total Eastern States	98,900		93,900	90,600
MOUNTAIN STATES—				
Wyoming	85,000		82,900	84,600
Montana	20,000		19,900	20,100
Colorado	4,400		3,900	3,850
Total Mountain States	109,400		106,700	108,550
MICHIGAN	36,000	40,000†	41,000	41,400
INDIANA	22,100		20,500	20,400
ARKANSAS	80,700	74,428	73,650	73,500
MISSISSIPPI	25,200		45,500	47,500
NEBRASKA	4,400		5,150	6,150
‡Total 8 Prorated States	3,289,900	3,175,711	3,272,475	3,325,700
Total United States	3,940,000		3,898,525	3,952,400

* Recommendation of Conservation Committe of California Oil Producers.
† Estimate of actual under prescribed regulations, which do not fix a definite state total allowable.
‡ Texas, California, Oklahoma, Louisiana, Kansas, New Mexico, Arkansas, Michigan.
§ Texas Railroad Commission's estimate of actual net daily production, allowing for usual under production of 3½ percent under net allowable, which at the beginning of August is calculated at 1,404,665 barrels daily. However, allowable normally increases as new wells are completed. Under August order, most Texas fields were ordered shut down August 2, 3, 9, 10, 16, 17, 23, 24, 30 and 31. Panhandle was ordered shut down August 3, 10, 17, 24 and 31.

sufficiency. (The latest figures available on East Coast crude oil stocks showed that refiners drew on storage to the extent of 386,000 barrels (55,000 daily) in the week ended August 2, but weekly fluctuations in stocks vary materially, and the change in any one week is not highly significant.)

Movement of refined products from the Gulf Coast to the Atlantic seaboard apparently continued in about normal volume, as evidenced by fluctuations in stocks of gasoline, heating oil, and heavy fuel oil in the two districts.

For the country as a whole, there was during the week of August 9 a reduction of about 750,000 barrels in gasoline stocks, a normal or less than normal withdrawal; the total at the end of the week having been 86,022,000 barrels, which was only about 1½ million barrels less than the 87,681,000 barrels on hand at the corresponding time last year.

On the East Coast, gasoline stocks showed a contra-seasonal increase, having risen 248,000 barrels, in contrast with a decrease of 904,000 barrels in the like week last year. Through this increase, the East Coast inventory went above the corresponding level of a year ago. As compared with the 21,686,000 barrels on hand in the district on August 9, there was in storage only 21,317,000 barrels on August 10 last year.

So far during the third quarter of this year, that is, in the 6 weeks from June 29 to August 9, there has been a net seasonal decrease in East Coast gasoline stocks amounting to only 1,202,000 barrels, in contrast with a reduction of 1,726,000 barrels in the corresponding period last year.

During the week of August 9, there was a reduction of 87,000 barrels in gasoline stocks on the Texas Gulf Coast, compared with an addition of 61,000 barrels in the corresponding week last year. The Louisiana Gulf Coast showed a 26,000-barrel increase compared with a 37,000-barrel addition last year.

Stocks of light fuel oil were increased about 700,000 barrels for the United States as a whole in the August 9 week, but nearly 200,000 barrels of the gain occurred in California, apparently in reflection of the stoppage of exports to Japan. The national inventory now totals 42,136,000 barrels, compared with 40,865,000 barrels on hand a year ago, a 3 percent increase.

On the East Coast, principal consuming area for heating oil, there was a normal seasonal increase of 713,000 barrels in stocks of the light fuel oils, nearly the same as the gain in the like week last year; and for the first half of the present, third quarter of the year, there has been, likewise, a normal build-up of 4,361,000 barrels, compared with an addition of 4,338,000 barrels in the similar period last year. The present inventory of 13,782,000 barrels on the East Coast is, however, a million barrels under that of 14,739,000 barrels on hand a year ago.

The light fuel oils apparently are moving out in good volume from the Gulf Coast. Stocks in coastal Texas were reduced 522,000 barrels in the week ended August 9, against an addition of 289,000 barrels in the like week last year; and during the past 6 weeks, there has been a net withdrawal of 1,135,000 barrels, compared with an increase of 1,745,000 barrels in the corresponding weeks last year.

United States stocks of heavy fuel oil were increased 612,000 barrels in the week ended August 9, having risen to 95,412,000 barrels. That amount was 11,000,000 barrels smaller than the quantity held a year before. But California storage is down 11,800,000 barrels, and that in the rest of the country, in the aggregate, is up nearly a million barrels.

East Coast stocks are 1,200,000 barrels smaller than a year ago, and in the week of August 9 there was a 351,000-barrel withdrawal, compared with a 572,000-barrel addition in the like week last year; while there has been a net increase of only 1,398,000 barrels during the past six weeks, compared with an addition of 2,023,000 barrels in the similar period last year. Coastal Texas stocks expanded 731,000 barrels in the August 9 week, compared with a 471,000-barrel increase in the corresponding week last year, but a small gain on the Louisiana Gulf Coast was about the same as that in the similar period last year.

Pacific foreign exports of all petroleum products from Los Angeles harbor for the week ended August 2 approximated 14,900 barrels daily, the lowest daily movement to be recorded since weekly data on shipments was made available in 1938, the Oil Producers Agency of California reported. For the preceding week shipments for Pacific foreign destinations averaged 176,200 barrels daily, or considerably above the average that has obtained over the past year.

Due to almost complete stoppage of Pacific foreign exports in the closing

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days of the month, exports for July averaged only 112,100 barrels daily, a decrease of 21 percent from the average shown for June this year and a drop of 20 percent from the average of 140,000 barrels daily reported for July last year.

Inventories of principal products increased 131,000 barrels daily during the week ended August 2. This represented the largest net gain in storage for any similar period this year. Light crude stocks were expanded by 81,300 barrels daily, and heavy crude stocks moved up 17,700 barrels daily.

The report indicated an increase of 3,900 barrels daily in finished gasoline stocks, while 38,700 barrels daily was added to gas-oil and diesel stocks. The only decrease shown for the week was in supplies of residual fuel, which dropped 10,600 barrels daily.

Bureau Reports Runs, Imports And Crude Stocks Up in June

An increase of 12,000 barrels in daily average crude oil runs to stills in June as compared with May, bringing the figure to 3,865,000 barrels, was reported August 15 by the Bureau of Mines.

The bureau reported also that daily average imports of foreign crude jumped 19,000 barrels in the same period to 144,000 barrels.

Total receipts of crude at refineries for the month were 117,781,000 barrels, of which 113,449,000 barrels was domestic and 4,332,000 barrels foreign oil, the bureau announced. Crude runs to stills were 115,935,000 barrels and fuel and losses 212,000 barrels, resulting in an increase in stocks of crude from 49,946,000 to 51,580,000 barrels during the period. The June 30 stocks, however, were about 5,000,000 barrels under the total for the same date in 1940, it was said.

Natural Gasoline

Natural gasoline production in June averaged 7,133,000 gallons a day against 7,019,000 gallons in May and 6,873,000 gallons in June, 1940, according to figures released by the Bureau of Mines August 15. Total production for the month was 213,990,000 gallons, slightly under the May total of 217,602,000 gallons, but output for the first half of the year was 1,244,082,000 gallons against 1,106,322,000 gallons in the same period in 1940. The principal increases in daily output occurred in the Texas Gulf and East Texas districts and in Louisiana. Stocks of natural gasoline continued to increase, those at refineries rising from 100,296,000 to 102,984,000 gallons during June and that at plants and terminals rising from 145,656,000 to 158,886,000 gallons.

Colombia Grants Rights On Magdalena Valley Tract

The Colombian Ministry of Mines and Petroleum has accepted a bid of Compania Colombiana de Petroleos Occidental S.A. to explore and exploit a tract of 21,900 acres in the Magdalena River valley and adjoining Richmond Petroleum Company's Villamizar concession. Standard Oil Company of California is reported as a substantial stockholder in the company making the bid.

World-Wide Developments

Geophysical Exploration In Canada Extended

Exploration for new fields in Alberta, Canada, which were begun last month by geophysical crews of the Geological Survey has been intensified by private geophysical parties working at various widely scattered points in the province. Western Drilling Company has announced an extensive development program for the Del Bonita, Twin River and Vermilion fields.

Alberta production in June reached a daily average of 26,105 barrels, an increase of 5463 barrels over June, 1940, production and 10 percent greater than production last January. The province had 5 new rigs spudded, 39 drilling, 9 completions and 1 abandonment. In Turner Valley, source of virtually all production, 6 new wells went on production for an initial daily total of 4278 barrels.

Following Eastern Seaboard practice, Canada has prohibited sale, delivery and distribution of oil products between 7 p.m. and 7 a.m. on week days and throughout Sundays. As further steps to curtail consumption, gasoline prices were raised 1 cent per gallon a few weeks ago and sales of gasoline were placed on a cash-and-carry basis. Although production of crude oil this year is expected to be about 900,000 barrels more than in 1940, need of heavy imports of oil products still remains, and shortage of supplies in the United States Eastern regoin confronts Canada with possible rationing. The move has so far been avoided because of injurious effects on the Canadian tourist trade.

Colombian Export Decline Reflects Tanker Shortage

Colombian crude oil exports in the January-June period materially declined relative to exports in the same period of 1940, reflecting loss of European markets and tanker shortages. Exports in the 1941 first half totaled 9,625,000 barrels, 87 percent of exports in the 1940 first half. Exports from the De Mares concession this year amounted to 8,070,000 barrels. No drilling on the concession was reported in May and June. Exports in June, 1,117,700 barrels, were only 60 percent of May exports and were lower than in any other month this year.

Colombian Petroleum Company's Barco tests, Socoavo 1, Tres Bocas 2-A and South Sardinata 1, were drilling shale and lime at 9391 feet, drilling claystone at 675 feet and coring shale at 4379 feet respectively last week. For the first six months of this year production on the Barco was 1,857,400 barrels. Crude exported totaled 1,559,980 barrels.

On its concession south of and adjoining Tropical Oil Company's Gutierrez property, El Condor Petroleum Company was drilling Casabe 1 at 6825 feet on July 1. Promising shows were found and preparations were made to test the well.

Colombian Petroleum Company has completed derrick for Socuavo 2 on the Barco. No. 1 was drilling sandstone at 9752 feet two weeks ago. Tres Bocas 2-A and South Cardinata 1 were in shale at 1330 and 4477 feet, respectively. Road was being built to North Sardinata 1.

Tropical Oil Company has resumed drilling in Cimitarra 1 on the Gutierrez concession after a temporary suspension at 5881 feet. The well was in black shale.

Mene Grande Planning Pipe Line in Eastern Venezuela

Mene Grande Oil Company is preparing to lay a 53-kilometer pipe line from its Leona field in eastern Venezuela to tie in with the 16-inch line running from the Oficina field to the Caribbean. Some pipe is already on the ground. Size of the new line will be 8 and 10 inches. Construction is expected to begin in a few months. The Leona field, with 6 producers, has had its production held down to 300 barrels per day recently.

In the San Joaquin district of Eastern Venezuela, Socony-Vacuum Oil Company was drilling sand and shale below 9885 feet in Guario 3 and cleaning out Guario 4 at 6770 feet. The company was drilling out cement in Anaco 1, depth 11,300 feet.

Sociedad Anonima Petrolera Las Mercedes is building derrick foundations for Mercedes 2, the company's second wildcat in Guarico, Eastern Venezuela. The first test, half mile north of No. 2, was abandoned.

Cuba's Motembo Field Gets Biggest Well

The biggest well in the Motembo field of Cuba was completed the middle of July. It is Centralia Naphtha Company's No. 5, Lot No. 1 of Ampliation of Faust Claim, located in the heart of the best producing wells. The test was drilled to 1349 feet, and on a 24-hour gauge through two 2-inch outlets, the well flowed 532 barrels of 54 gallons each of pure natural naphtha of 56 octane.

Actual production of the Motembo field is over 1,000,000 gallons monthly, and naphtha is sold at 20 cents a gallon at the mouth of the well. This has been more than enough to fulfill local consumption requirements, and now with the new discovery conditions will be worse unless imports are reduced.

West Indian Exploration Work Near Completion

Prospect of future drilling in the West Indies awaits completion of exploratory work that has been under way for several years in the Dominican Republic and Haiti. Dominican Seaboard Oil Company has been studying properties totaling about 2,000,000 acres in the republic. In 1939 the company obtained two small producers of 21-gravity oil at around 500 feet on the Maleno anticline, a structure 13 miles northwest of Azua, a few miles off the southern coast in the western part of the country.

In Haiti The Atlantic Refining Company in collaboration with Dominican Seaboard Oil Company, Standard Oil Company (New Jersey), and others, has been conducting general exploratory work and is beginning to make detail studies of the properties surveyed.

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*For detailed scientific explanation see *Journal of Industrial and Engineering Chemistry*, for March, 1941; Page 339

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U. S. FIELD OPERATIONS

Oklahoma

Three Wildcat Discoveries Recorded in Seminole County

Seminole County records three wildcat discoveries, Cromwell sand strike for Okfuskee County, First and Second Wilcox sands new horizons West Hotulke pool. Pottawatomie County, Caddo County test deepening below 10,084 feet.

Seminole County: Hall-Jordan Oil Co. and Herman Hurst et al's Jennings 1, C N½ SE SE 8-8n-8e, 1 mile northwest of Northeast Wewoka pool, perforated Hunton lime 3977-83 ft, swabbed 100bbls oil, 50 bbls water 24 hours, acidized 1000 gals, flowed and swabbed 150 bbls oil, 160 bls salt water through 2½-in 24 hours, testing. Deep Rock Oil Corp. et al's Work 1, NEc 20-8n-8e, 1 mile south Jennings discovery, drill-stem test 3194-3216 ft Cromwell sand, 7,000,000 ft gas, show oil and water, deepening to Wilcox. R. P. Tate et al's FleetsOsborn 1, SE SW NE 11-6n-7e, 1 mile northwest Sasakwa pool and 1 mile southwest Fish pool, topped Calvin 1474 ft, cemented 5-in top sand, swabbed 2 bbls oil, 4 bbls water hourly, deepened 1500 ft, swabbed 25 bbls oil, some water 24 hours, testing.

West Hotulke Area: Smith Brothers Drlg. Co. et al's Billington 1, SEc 22-9n-4e, 1 mile east West Hotulke pool, Pottawatomie County, topped First Wilcox sand 4428 ft, drille din 4445 ft, swabbed 120 bbls oil, 60 bbls water, 6 hours, 36 gravity; to pump, may be discovery or new horizon and extension for Hotulke area. Atlantic Refining Co.'s Higbee 1, SE NW SW 22-9n-4e, northeast edge production, Second Wilcox sand 4629-34 ft, deepened for soft pay 4645-47 ft, swabbed 20 bbls hour, no water, 38-gravity, to pump.

Okfuskee County: Malernee Oil Co.'s Beard 1, SE SW NE 7-11n-8e, 4½ miles west Dill pool, topped Cromwell 3695 ft, penetrated to 3710 ft, drill-stem 3694-3710 ft, 10 bbls oil, 1,000,000 gas hour, cemented casing 3695 ft, drilling plugs.

Pontotoc County: Hughes-Thomas et al's Johnson 1, SWc SE 26-4n-5e, 2 miles west Ada, electric log and core 950-72 ft in Calvin sand showed full saturation, skidded derrick to drill in and test, 1610 ft, estimated 50 bbl producer.

Kansas

Kearny County Wildcat Has Big Potential But No Flow

Kearny County wildcat established drawn-down potential 2200 barrels daily, fails to flow; Cowley County wildcat hits bottom-water in Arbuckle lime on prominent structure; wildcats testing in Norton, Barton and Russell Counties.

Kearny County: Stanolind Oil & Gas Co.'s Patterson 1, C E½ SE SE 23-22-38w, initial commercial producer for the county, perforated Cherokee sand 4748-50 ft, (sand 4740-4751 ft), 3300 ft oil fill-up first hour, swabbed 21, 23 and 20 barrels hourly 1500 ft off bottom through tubing, would not flow, established draw-down potential 2200 barrels daily, installing pumping to test, consideration given to 40-acre spacing program, no offsets announced.

Cowley County: Deep Rock Oil Corp.'s Daniels 1, SWc NE 10-30-3e, 2½ miles northeast Udall pool, drilled plugs Arbuckle lime 2934-70 ft, no results, jetted 1000 gallons acid, brought in water, acidized 2500 gallons thru tubing under pressure, water increased, no show oil, cementing off bottom-water, previously recovered saturated core 2948-58 ft, testing.

Barton County: Helmerich & Payne et al's Unruh 1, C E½ NE NW 16-20-15w, 4 miles east Pawnee Rock pool, penetrated to 3872 ft Arbuckle for bottom water, plugged back 3820 ft, top Arbuckle 3720 ft, previously showed 1,500,000 gas and 25 bbls oil per day, cemented 5-inch casing 3724 ft above pay, testing. W. N. Bartlett et al's Wondra 1, SE NE NE 5-17-13w, 2 miles west of Ainsworth pool, top Topeka 2830 ft, Lansing 3118 ft, Arbuckle 3357 ft, cored 3359-61 ft, recovered 1½ ft saturation, cemented 5-in 3357 ft. W. O. Allen's Stoskopf 1, NWc 29-16-13w, 2 miles north above wildcat, logged Lansing 3147 ft, Arbuckle 3373-75 ft, good show oil, cemented 5-in 3374 ft.

Russell County: Central Pet. Co. et al's Steinlie 1, C N½ NW NE 29-15-12w, 2 miles west Dubuque pool, new Arbuckle lime discovery designated as Forest Hill pool, top pay 3318 ft, total depth 3323½ ft, established drawn-down potential 1099 barrels.

Nebraska

Harlan County Wildcat Estimated 200-300 Barrels

South-Central Nebraska and Central Kansas Uplift attract notice with promise of discovery in Harlan County, Nebraska, and a Kansas wildcat strike estimated 200-300 barrels per day; Falls City records largest producer.

Harlan County: Veeder Supply & Development Co. et al's Battin 1, C N½ SE NW 15-2n-18w, near Alma, 10 miles north Kansas line, topped Lansing 3385 ft, ripped casing 3541-92 ft, 3385-90 ft, cleaned hole 500 gals acid, strong gas encountered with oil fill-up; to treat 5000 gals acid; gas and oil increasing, estimated 200-300-bbl producer. On 15,000-acre block, supported by Sinclair Prairie, Gulf, Texas Co. and Margay Oil Corp. Log disclosed base Ft. Haves 790 ft, Dakota 1140 ft, Lansing 3385 ft, Conglomerate 3770 ft, Viola 3858 ft, Simpson 3985 ft, Arbuckle 4046-4202 ft, dry, electric log, cemented 7-inch casing 3609 ft. Same operators Alter 1, C W½ SW NW 15-1n-18w, 6 miles south on 9000-acre block, checked structurally higher on Topeka lime than Battin 1, rotating below 3600 ft in Lansing lime.

Buffalo County: Carter Oil Co. drilling stratigraphic test near Kearney, to Topeka lime.

Falls City: Ohio Oil Co.'s Bucholtz 6, CWL NE SW 17-1n-16e, topped Hunton 2208 ft, cored to 2299 ft, cemented 4-in 2297 ft, perforated 2274-80 ft, flowed 10 bbls per hour, treated 500 gals, flow increased 255 bbls 107 minutes.

Illinois Basin

Two Richland County Fields Opened in McClosky

Two Richland County fields opened; Wayne County wildcat cores pay; Saline County's first oil well flows.

Richland County: Ohio Oil Co.'s Koertge 1, NW 29-2n-14w, blew in when plug was drilled to McClosky at 3115-25 ft; mud pumped in, shut in for storage. C. R. Craft's Daubs 1, E½ SW NE 8-2n-14w, swabbed and flowed 32 bbls oil, perforations McClosky 3144-52 ft.

Wayne County: Olson Drilling Co.'s Puckett 1, W½ NW SE 36-1n-6e, Shell farmout, flowed 546 bbls oil, McClosky 3207 ft; either 2-mile east extension of new Johnsonville field or pool opened. Largest producer yet drilled in Johnsonville field, Texas Co.'s Leathers 1, completed more than 2 weeks ago, still flowing 4900 bbls daily under choke from McClosky.

Saline County: Thompson Drilling Co.'s Reich 1, NE SW NE 8-8s-7e, first well in county, flowed 25 bbls fluid hourly part of which was water, from McClosky 2943-48 and 2962-71 ft after 1000 gallons acid. Potter's Sutton 1, SE SE SW 28-8s-7e, filled with water after plug drilled to Palestine sand 1943; will be deepened.

Franklin County: Oil Carriers, Inc. Wayman 1, SW NW SW 1-6s-2e, 2 miles north and west Benton field, swabbing water and small scum of oil after casing perforations opposite McClosky lime.

Hamilton County: Kingwood Oil Co.'s Johnson 1, NE SE NE 14-6s-5e, Aux Vases discovery, flowed 938 bbls in 20 hours after shot at 3174-89 ft.

New Pays: New Haven field, White County, Hiawatha Oil Co.'s Stinson 5, SE SE NW 19-7s-11e, swabbed 15 barrels natural McClosky lime, testing after acid; other pays in field, Tar Springs, Cypress, Aux Vases and Hardinsburg. Allendale field, Wabash County, Ward Wickshire et al's Edith Ikes 1, SE SW NW 14-1n-12w, testing Hardinsburg at 1717 ft. Other pays in area Waltersburg and Tar Springs.

Posey County Test Showing To Confirm New Indiana Pool

A Posey County test, expected to confirm a new Cypress-sand pool in Welborn Switch area, was reported running high near top of Cypress, and in southeastern Gilbson County a wildcat was abandoned east of Mackey.

Posey County—Drilling at 2314 ft, dry through Tar Springs, Whisenant & Tranchard's James Bundy 1, NE NE SW 17-6s-14w, two locations west of

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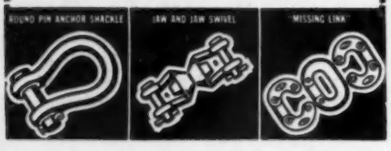

same operators' Florence McFadden 1, recent Cypress discovery. The new test topped Glen Dean 2260 ft, 3 ft higher than discovery. Central States Oil Co.'s D. H. Breece 1, NW SW SW 19-6s-12w, Tar Springs sand discovery well, on last 24-hour test pumped 65 bbls of oil and 130 bbls of water.

Gibson County—Schneider & Gwinn's Schmidt 1, C E½ SW SW 13-3s-9e, quit at 1060 ft.

New Mexico

Two Lea County Wildcats Getting Production Test

Production test pending on two Lea County wildcats, and intermediate test for Skaggs and Monument fields. Wildcat failure on east edge county.

Wildcats: Richmond Drilling Co.'s State-Shell 1, C SW SE 22-17s-33e, between Maljamar and Vacuum fields, logged broken saturation 4381-4584 ft, total depth. Will set pipe, having bailed 45 bbls fluid, 75 per cent oil on 10-hour test. Topped lime 4135 ft, elevation 4146 ft. J. W. Brown et al's State 1, Lot 11, 4-16s-35e, set 5½-in 5263 ft, plugged back from 5507 ft to 5320 ft. Carl King et al's State 1, C NW NW 16-11s-38e, abandoned 5312 ft, elevation 3910 ft.

Lea Semi-Wildcat: Continental Oil Co. et al's Skaggs 1-B-23, C SW NE 23-20s-37e, midway between Skaggs and Monument areas, drilling plugs from 7-in 3679 ft, total depth 3760 ft. Show gas sandy-lime 3526-98 ft, but drill-stem test 3680-3760 ft proved dry.

Lea County: Continental et al's State 12-J-2, inside location west portion Arrowhead, flowed 42 bbls potential natural 11/64-in, sandy-lime 3843-50 ft.

West Texas

Permian Basin Oil Area Extended 35 Miles to Lubbock

Production in Permian basin extended 35 miles northeast into Lubbock County creating big lease demand on all known lime highs in general area as new strike is in lower Permian. Crane County yields big wells, including third Ellenberger for South Sand Hills field. Productive limits Abell pool moved southeast and northwest extension promised, and second producer for Apco outpost area. Northwest outpost Todd deep pool structurally low but may produce. Deep test within Slaughter field to explore middle Permian.

Lubbock County: L. C. Harrison et al's Nairn 1, C SE SE J. H. Gibson Section 25, Block A, 3½ miles northeast Lubbock, provided an important development for the upper basin region in yielding 10 bbls 31-gravity oil hourly on preliminary swabbing test after using 2000 gallons acid in broken saturation 4893-4915 ft. Volume of gas is negligible. The well proved dry when originally tested at 4905 ft, with 7-in 4857 ft, then after several days shutdown began filling with oil. Oil stained lime was logged in deepening 10 ft to 4915 ft, and in view of the absence of water it will be carried deeper. Production is from lower middle Permian, and possibly a new zone for district. It is below the Clear Fork topped 4550 ft, elevation 3203 ft. Nearest production is Hockley County sector of Slaughter field, which produces from upper Permian 4900-5100-ft level. Lubbock County has comparatively few tests, deepest being the discovery. Buried granite ridge along north end county responsible for uplift as Nairn 1 topped Yates 1930 ft; first lime 2690 ft; San Andres lime 3100 ft; and San Angelo 4335 ft. Texas Pacific Coal & Oil Company and Seaboard Oil Company, joint owners of 10,500-acre block, assigned 3600 acres of checkerboard to Harrison et al for test. Former retained east and southeast offset acreage.

Cochran County: Atlantic Refining Co.'s Boyd-Humble 21, SEc Labor 9, League 56, Oldham School Lands, passed up regular 5000-ft pay in Slaughter field, and drilling lime 5400 ft to be first to try for Clear Fork production within producing area.

Winkler Deep: Magnolia's Walton-State 20, wildcat between Keystone and Kermit fields, drilling shaley-lime 7980 ft, having logged base Permian and top Devonian 7620 ft, elevation 2834 ft. Passed up promising oil and gas zones middle and lower Permian that will be tested. Walton-State 20 is first deep test for county, and is forerunner of considerable deep prospecting to north and south general area. Sub-Permian formations vary in this district, as American Liberty and Perkins' Cowden 1, 13 miles north by east in Andrews County, logged Basal Permian-Mississippian contact 7780 ft, and quit in latter 8012 ft. Phillips Petroleum Co.'s University-Andrews 1, 27 miles east by north, logged Permian-Simpson contact 7940 ft and abandoned in Ellenberger 8364-68 ft, elevation 3228 ft. Fullerton Oil Co. has contracted to start Wilson 1, PSL Section 15, Block A-32, northwest Andrews County, near future on 8500-ft depth contract. In northwestern Gaines County, Tom Sloan et al contracted to drill a 7200-ft wildcat NW PSL Section 13, Block A-7, on acreage assigned by Argo Oil Corporation. Permian failures in general area established regional high.

Ector County: Sinclair Prairie's Johnson Est. 1, NEc SE T&P Section 31, Block 42, T-1-S, wildcat between northeast sector Foster field and southeast portion North Cowden field, logged show gas 4240 ft and show oil 4250 ft, drilling 4280 ft.

Crockett County: Amerada Petroleum Corp. et al's Todd 1-B, 1¼ miles northwest outpost Todd deep area, structurally low, stopped Crinoidal 6050 ft, and drill stem test 6044-6100 ft, yielded 4 joints oil and gas-cut mud, no water. Resumed drilling to go to Ordovician. Partnership's Todd 1-C, 3½ miles west production, drilling 2810 ft.

Reagan County: Amerada Petroleum Corp.'s University 1-A-R, first deep wildcat for southeast corner county that proved Ellenberger structure early August flowing 98 bbls 44-gravity oil 24 hours natural 12/64-in choke, saturation 9017-50 and 9060-66 ft, drilling extremely hard cherty-lime 9237 ft without production increase. Hard zone topped 9233 ft.

Crane County: Gulf's Waddell et al 25, ¼ mile east of semi-wildcat that made prolific oil and gas flow from Ellenberger to open area 4 miles south Sand Hills field, flowed 693 bbls 37.2-gravity oil first 2 hours and 284 bbls next 4 hours, gas/oil ratio 2976/1, fol-

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lowing 5000-gallon acid treatment 5651 ft in Ellenberger, topped 5488 ft. Company rigging up Waddell et al 29, ¼ mile northwest new completion. Continental Oil Co.'s Jones 1, 1⅓ miles south, cemented 9-in protection string 1525 ft, logged salt 510-1296 ft. Gulf's Waddell 44, south edge Gulf-Waddell field, flowed 274 bbls 6 hours natural, broken pay 3458-92 ft, and acidizing, with big well assured. Its Henderson 27, SE NE PSL Section 4, used 5000 gallons acid 3552 ft, total depth, potential 4752 bbls 36-gravity oil.

Abell: Magnolia's Young - State 1, southeast outpost, set pipe after drill-stem test 5142-46 ft yielded steady flow rated 50 bbls oil hourly from McKee sand, topped 5100 ft, elevation 2390 ft. Company's Gerety 1, northwest extension, tested 68,000,000 ft gas open flow, perforations 5273-84 ft, plugged back from Ellenberger 6088-6292 ft, elevation 2396 ft. Stanolind and Superior Oil Co. (Cal.)'s Thrapp-Walker 1, ⅝ mile northwest of latter, rated 30,000,000 ft gas on drill-stem test 5370-5423 ft in McKee sand, topped 5360 ft, elevation 2391 ft, and coring 5855 ft.

Apco: Anderson & Prichard Oil Corp.'s Boren 1, ½ mile west of Olson Oil Co. and McCandless' semi-wildcat Ellenberger producer, flowed oil by heads rate 200 bbls daily from perforations in Ellenberger, topped 4490 ft, elevation 2469 ft. More perforations will be made before acidizing. Superior Oil Corp. and McCandless' Crockett 1, ¼ mile northwest original well, is new operation.

North Texas

Third Mississippian Strike For Year in Clay County

Clay County records third Mississippian oil pool for year, and deeper pay in Ross-Jolly pool confirmed. Young County has new Bend lime discovery. Testing underway on three Montague County wildcat prospects. North outpost Fargo pool makes big flow from Strawn. Water trouble developed by two confirmation tests South Electra deep zone.

Clay County: L. T. Burns et al's Wynn 1, southeast corner Lot 34, H. Williams Survey, 2 miles west by north Joy, opened new pool in swabbing 75 bbls oil 8 hours after flowing 1-hour head, used 2000 gallons acid 5905-67 ft in Mississippian, topped 5891 ft. Swabbing to kickoff after reacidizing with 4000 gallons. Continental Oil Co. et al's Ross 3, southeast edge Ross-Jolly 5300-foot Bend pool, flowed by heads while cleaning out following 200-quart nitro shot 5615-5718 ft, bottomed dry Ellenberger 5766-5846 ft. First test within producing area to go to Ordovician. Royal Petroleum Corp.'s Hatfield 1, southeast corner W. Glass Survey and northeast outpost, abandoned in Ellenberger 6025 ft. Bridwell Oil Co.'s Halsell 8-A, 2100-foot northwest outpost for Halsell 4700-foot Strawn pool, awaiting nitro shot after failing to flow from upper Strawn 3654-63 ft, new zone for pool.

Wilbarger County: Anderson & Prichard Oil Corp.'s Bond 1, north edge Fargo pool, became largest producer lower pay in flowing 191 bbls oil 3 hours ½-inch choke following 2000-gallon acid treatment of Strawn at 4635 ft. F. H. E. Oil Co. et al's Allison 1, wildcat and 4 miles northeast Vernon, abandoned 4725 ft.

Electra Deep: Magnolia's Waggoner-H&TC 64, NW SW H&TC Section 15, Block 13, Wilbarger County, tested water after using acid in Ellenberger 3008-17 ft, 4½-in. 3008 ft. W. T. Waggoner Estate's Fee 33, west of the single deep producer, cemented perforations, which yielded 400 ft oil and 200 ft salt water in Ellenberger 3010 ft, and reperforating.

Montague County: Benson Bros. et al's Seay 1, which extended Ringgold pool 1¾ miles southeast last April as small pumper 5752-62 ft in Bend, topped 5664 ft, flowed 68 bbls. 45-gravity oil 5 hours when deepened to porous conglomerate 5772-76 ft. Well produced 35-gravity oil in upper, and may drill through section. Superior Oil Co. (Cal)'s Seay 1-A, north offset, entered Bend 5644 ft, 36 ft high, with thin bed oil saturated conglomerate in core 5780-96 ft, plugged back from dry Ellenberger 5918-6017 ft to cement 7-in 5961 ft. Benson Bros. et al's Lowery 1, Block 72, 2 miles east by north Ringgold original pool, and 2 miles north above group fishing drill pipe 6166 ft; structurally low as topped Bend 5736 ft and Ellenberger 6036 ft.

Walter Gant and Continental's Turner 1, northeast corner E. T. Ry. Section 59 and ½-mile southeast of partnership's Brown 1, which indicated commercial production before junking in Ellenberger 7288-7333 ft, entered Bend 6057 ft, 34 ft high, and logged broken saturation in coring to 6122 ft. Will deepen before casing hole to try for completion. Brown 1 logged free oil in Bend, and promising shows in Mississippian and Simpson, 490 ft and 410 ft thick, respectively. Shell's Thomas 1, 1⅝ miles northeast of the Holt 1700-1800-foot pool, was testing with 4½-in 3023 ft, having plugged back from water in Ellenberger 4144-4646 ft to 3045 ft. Sand passed up at 3035 ft. Gibson & Jennings, Inc.'s Howard 4, 2 miles southeast of Holt pool, to perforate opposite oil saturation in sand 3940-58 ft, 7-in 4102 ft, plugged back from granite 4506-14 ft.

Young County: L. T. Burns et al's Ragland 1, NE NW TE&L Section 257, 4 miles west by south Jean and between two Mississippian strikes made this year, flowed 161 bbls oil and 64 bbls water 3-hour gauge, acidized 2000 gals 3987-4052 ft in Bend, topped 3920 ft. Plugged back from dry Mississippian 4872-5079 ft.

East Texas

Gregg County Wildcat Prospective Distillate Well

Gregg County wildcat in Trinity series is prospective gas-distillate producer. Woodbine wildcat in Cherokee County and Trinity prospect in Henderson County cased to try for completion.

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Upper Woodbine failure on Frankston prospect, Anderson County, will be deepened.

Gregg County: Roger Lacy et al's Flanagan 1, Hayden Edwards survey and 4 miles south of Willow Springs deep pool, developed light gas blow and recovered 360 feet of distillate and gas-cut mud on 30-minute drill-stem test at 7235-7502 ft, elevation 374 ft. Another drill-stem test will be made.

Henderson County: British-American Oil Producing Co.'s Young 1, 7½ miles southwest of Athens, cemented 5½-in 7918 ft, plugged back from dry Travis Peak 8357-8474 ft. Will perforate opposite promising gas-distillate zone in Rodessa, 7606-7936 ft, elevation 393 ft.

Cherokee County: Bobby Manziel et al's Limberlog School 1, third test for the group on the Larissa prospect, cemented 5½-in on bottom, 5136 ft. Drill stem test 5100-36 ft yielded salt water; Upper Woodbine shows broken saturation.

Wood County: Roger Lacy et al's Snider 1, east edge S. Castleberry survey and east outpost Hawkins field, structurally low, drilling shale 4250 ft.

Southwest Texas

Live Oak County Well Producing From Carrizo

First production in the Carrizo zone in South Texas was established by Edwin M. Jones with a gas/oil producer in Live Oak County. The well had failed to make a commercial producer in the Wilcox zone and subsequently was plugged back.

Live Oak County: E. M. Jones' West B-3, Sec. 56, 4 mi sw George West, Live Oak County, plugged back from 9733 ft, perf 8920-44 ft, flowed 186 bbls 46.7-gr oil, 1,360,000 cu ft gas per day ⅛-in ch, 4375 lbs tubing, 4725 lbs casing pressures, reduced to 1/16-in ch flowed 12 bbls oil, 490,000 cu ft gas per day 5200 lbs tubing, 5350 lbs casing pressures, still testing.

LaSalle County: Quintana Petroleum Corp. staked location for Washburn Ranch 1-B, Sec. 86, LaSalle County, 1¼ mi sw Wilcox discovery, 2 mi s deep discovery, Washburn field, contracted to 6500 ft, through Wilcox formation. May be carried to 11,000 ft lime from which 3-A is cleaning, flowing gas and amber distillate.

Lower Gulf Coast: Sinclair Prairie Oil Co.'s Volkmer 1, 3120 ft w Texana field, Jackson County, drill stem test rec 1030 ft oil, 50 ft oil-cut mud, 45 lbs through ¼ and ⅜ chokes 12½ minutes, ran electric log 5137 ft, dr to 5780 ft, set 5½ in cas 5240 ft. Will open third sand for field and first oil production, two previous making gas-distillate.

Transwestern Oil Co.'s Dunlap 3, ¼ mi s East Premont field, Jim Wells County, dr to 6276 ft, logged 6100 ft sand low, set 7-in 6199 ft, perf 6132-34 ft, flowed sw in 21 min, squeezed reperf 5983-88 with 19 shots, comp 160 barrels per day 7/64 ch 1190 lbs tubing, 1375 lbs casing pressures, no water, gas/oil ratio 368/1. Opens new sand.

LaGloria Committee's LaGloria Unit 13, nw outpost LaGloria distillate field, Jim Wells, dr to 6903 ft, tested several levels and abandoned.

Gulfboard Oil Corp.'s State 1, Tract 114, near Steamboat Pass field, Calhoun County, dr below 10,550 ft, going to 11,000 ft.

Chicago Corp.'s Wardner 20, 4/5 mi s Stratton field, Kleberg County, perf in Wardner sand below 6500 ft, completing as gas-distillate well. Bottom 7200 ft, 7-in cas 6600 ft. Extends field.

Balcones Fault Zone: Marts & Beaven's B. Cheney 1, 3000 ft ne disc Elgin field, originally aband 3370 ft, deepened to 3585 ft, set 5½-in 3525 ft, testing show 3528-45 ft; Edwards lime 3340 ft. If producer will open new horizon for field and would be first production ever developed 200 ft below top formation.

R. R. Ogden's Chamberlain 1, Burleson sur, 4½ mi nw Dale, Caldwell County, still testing Dale lime and Austin chalk 2052 ft, making little oil after acidizing. Would open new field.

W. L. Marshall's Sanders 1, Herrera Grant, 1 mi nw Lavernia, Wilson County, set 7-in 1175 ft, testing Navarro to 1240 ft. Would open new field.

Texas Gulf Coast

Wilcox Sand Tests Are Near Crucial Depth

Several Wilcox sand tests in Montgomery County have reached interesting depths, and will be watched closely during the next few weeks.

Montgomery County: Continental Oil Co.'s Frazier 1, east of Willis, drilling ahead around 7300 ft, very near the Wilcox.

Atlantic Refining Co.'s Foster Lumber Co. 1, just southwest of Fostoria, was below 8790 ft and should be near top of Wilcox also.

Glenn H. McCarthy's Seyle 1, west of Magnolia, was not making much hole below 7100 ft and is still some distance

NIGHT OPERATION from a lithograph by E. M. Schiwetz

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above crucial point. Reportedly, running about normal for region.

Superior Oil Corp.'s westerly outpost at Lake Creek field is now the deepest drilled in area. An electric log was run at 10,000 ft, but operators continued to drill ahead having gone below 10,119 ft.

Tyler County: East of the Spurger field, Republic and Houston have completed Hooks 1 as dry gasser from Cockfield, sand, casing perforated 4920-35 ft.

Special Allowables Requested For Lovell's Lake Field

Land Commissioner Bascom Giles has requested that operators in the Lovell's Lake field, Jefferson County, agree to special allowables for wells drilled on State lands in the Hillebrand Bayou. Last week Giles held a conference at which representatives of Humble Oil & Refining Company and Stanolind Oil & Gas Company were requested to approve full 40-acre allowances for two wells to be drilled in Hillebrand Bayou by Phillips Petroleum Company.

The State and Phillips claim 50 acres in the lease, but Giles wanted 40 acres assigned to each well. Railroad commission rules in the field provide for 40-acre proration units, and the other operating companies pointed out that some wells now get a 25-acre allowance only. Both Humble and Stanolind were willing for Phillips to get a full 50-acre allowance, but objected to any plan which gave Phillips a larger amount.

At the request of Giles, representatives of both companies agreed to present the question to their production departments for further consideration. Giles said that the railroad commission would be requested to ratify the agreement if it was made and reported that a similar agreement had been worked out for the Ellenberger production in Wichita County and in other fields in the state.

The lease under which Phillips holds provides for a 50 percent royalty to be paid to the state, and Giles pointed out that this additional income would all go to the permanent school fund.

Louisiana Gulf Coast

Indications of Oil Found At Point Au Fer Island

Best indications of production yet procured at Point Au Fer Island were obtained during the week, and constituted principal news from South Louisiana fields.

Terrebonne Parish: Barnsdall Oil Co's Nelson Development Co. 3, on Point Au Fer Island, drilling below 700 ft, after coring two sands showing gas with traces of oil. Best indications thus far of several wells drilled on prospect. First sand, tested between 6751-61 ft, showed 2000 pounds pressure in 11 minutes, scum of oil in pipe when pulled; cored to 6776 ft, tested water, took sidewall cores and drilled ahead, getting more sand with gas showings 6890-6910 ft.

Vermilion Parish: Fohs Oil Co.'s Grady Lee Humble 1, which extended Gueyden field north and opened a new sand, established potential of 600 barrels through 12/64-inch choke, tubing pressure 1250 and casing 1275 pounds, no water. Casing perforated 7565-80 ft.

Calcasieu Parish: Gulf Oil Corp's Calcasieu National Bank 1, wild well on Hays prospect, is dead, having bridged itself at 3 a. m. August 13.

St. Martin Parish: On the east side of Anse La Butte field, W. R. Davis Inc.'s Voorhies 3 plugged back after reaching 9902 ft, and is deflecting hole from about 8710 ft to redrill to find pay opened by Voorhies 2.

North Louisiana

LaSalle Parish Wildcat Has Show in Wilcox

Wildcat in LaSalle Parish logs oil and gas showing in Wilcox; exploration campaign in Olla trend continues active; West Carroll wildcat to be deepened.

LaSalle Parish: Scruggs & Todd have cemented casing at Pipes 1, NW NE 19-8n-3e, after an oil and gas showing in the Wilcox, perforated 3230-34 ft; other showings 3130-70 and 3505-18 ft in the Wilcox to be tested.

Olla Trend: Exploration and leasing in the Olla trend continues unabated. Carter Oil Company is especially active across the entire trend from Grant to LaSalle Parishes. H. L. Hunt also active, making new Winn Parish wildcat location last week as part of big drilling campaign. Joe Bolt with 7,000-acre block around Section 10-6n-6e, Catahoula Parish, plans test to top of Midway. W. R. Davis has 12,000-acre option block around Section 13-4n-5e.

Union Parish: R. E. Anderson leasing block in townships 22 and 23 north range 2 west, Union Parish, southwest of Carter Oil Company's Lockhart 1, Section 14-23n-2w, failure in Smackover lime.

To Deepen Wildcat: T. R. Thornton of Fort Worth has acquired Crow Drilling Co.'s interest in Bruce 1, C SE 16-21n-9e, West Carroll Parish wildcat, drilled to 6285 ft in Smackover lime, and checking high, and will deepen.

Mississippi

Tinsley Dome Operators Limit 500 Barrels Per Well

Southwest edge test at Tinsley Dome, Yazoo County, logs oil showing; cumulative production in that field passes 10 million barrel mark as operators agree to voluntarily curtail production to 500 barrels daily per well; Carter core drills in Oktibbeha County.

Tinsley: W. G. Ray Drilling Co.'s Walker 1, SE NW 2-9n-3w, ¾-mile southwest edge test logs saturated Woodruff sand in cores at 5028-42 ft but two drill stem tests fail when sidewall packer fails to hold. Slick-Urschel Oil Co.'s McGraw 1, SW NW 25-11n-3w, abandoned 6528 ft, in Tuscaloosa (Woodbine). Salty cores in Woodruff horizon at 5185-5201 ft; and in Perry sand at 5670-80 ft; top Midway, 4120 ft;

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Top Selma chalk, 4985 ft (elevation 274 ft).

Tinsley Dome operators promised voluntarily to hold production to 500 barrels daily per well, there being over 200 wells in the field. At hearing before State Oil and Gas Board no action taken and no testimony presented on proposed proration, which has never been prorated and now has cumulative production of over 10,000,000 barrels; field two years old on August 29.

Michigan

Reed City Extension Starts 11 New Operations

Mile east extension at Reed City indicates minimum 2000-acre Monroe pool.

Reed City: Gordon & Bolger's State 1, C S½ NE NE 29-18n-10w, Osceola County, mile east developed field, flowed 145 bbls hr natural from Monroe lime 3529 ft. Attracted 11 locations. Fourteen wells producing in pool with minimum 2000 acres looking productive, no definite boundaries.

Deep Test: Gulf Refining Co.'s Bateson 1, Sec. 2-14n-4e, Bay County, nearing record depth east of Mississippi, drilling brown lime in lower Trenton section at 10,106 ft and scheduled to hit at least 10,500 to get St. Peter sand. Eastern record now held by Hope Natural Gas Co.'s recently abandoned well in Braxton County, West Virginia, at 10,286 ft.

Wildcats: Sun Oil Co.'s Bauman 1, Sec. 29-24n-1w, Roscommon County, topped Traverse 2106 ft and swabbed oil and water, 2126 ft. Pipe being reset to continue to Dundee.

H. H. Heinig's Dodge 1, Sec. 5-9n-8e, Genesee County, still under test at 1887-92 ft in top Traverse lime. Attempts to shutoff top water ineffective.

State Sale: J. V. Wicklund, Detroit, paid $30,100 for NE SE 34-21n-3w, Roscommon County, for top price at August 7-8 state lease auction. Tract offsets Hilliard's State lease on north where 5000-7000-bbl day Traverse well at 3448 ft in June.

California

Two Kern County Deep Tests Abandoned

Two deep tests in Kern County are abandoned and another is starting. Los Angeles semi-wildcat makes a pumper.

Kern County: Tide Water Associated abandoned KCL-E-44-7, Section 7-30-26, at 8872 ft in gray sand and shale; small oil sand section at 8271 ft, silty shale with streaks of sand at 8328 and 8553 ft. Ohio Oil Co. is quitting KCL-G-1, Section 36-29-26, at 10,600 ft; Rio Bravo 10,475 ft. Veder 10,512. Richfield Oil Corporation has located Kramer 1, Section 34-28-27, projected 8200 ft on 1500-acre lease.

Jergins Oil Co. completed Dominguez No. 1 semi-wildcat in 5-4-14, Redondo area, Los Angeles County, pumping 75 to 85 bbls heavy oil; bottomed 3848 ft, plugged to 3620 ft, producing from 300 ft of zone. Second well on the property to the southeast planned.

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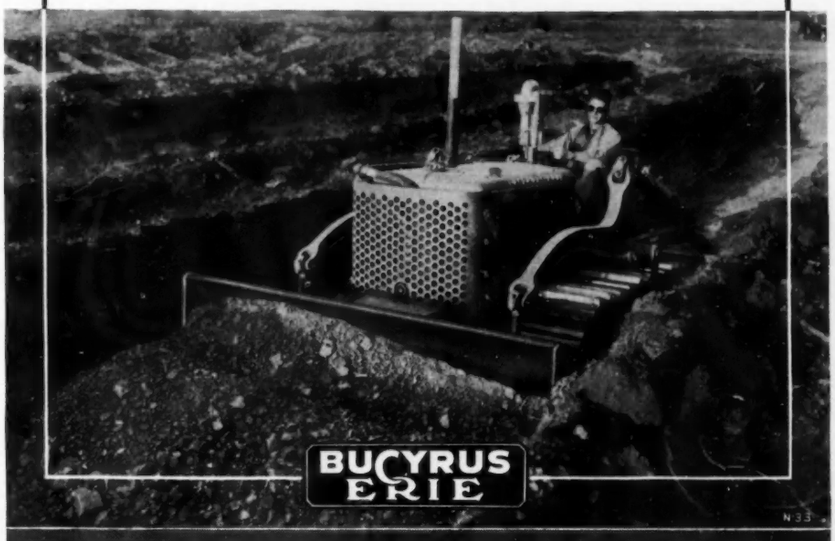

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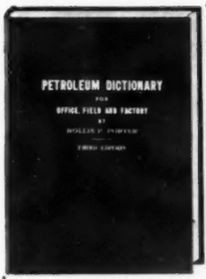

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UNITED STATES WELL COMPLETIONS

Arkansas

Columbia County (Wildcat)—
L. L. Prock, Young 1, 21-15-21.. * 4006
Clark County (Wildcat)—
Coker & Grieves, Williams 1, 7-11-20 ..... * 1765
Jefferson County (Wildcat)—
Patterson & Stratton, Stratton 1, 35-6-9 ..... * 1693
LaFayette County (McKamie)—
Atlantic, Bodcaw 5, 29-17-23..... 400 9381
Carter, Hanes 1, 25-17-24..... 400 9346
St. Francis County (Wildcat)—
D. T. Hargraves, Peters 1, 21-4n-1w * 2500

California

Fresno County (Coalinga Eocene)—
R. S. Lytle, No. 1-7F 1336 6837
Fresno County (Coalinga Northeast)—
Pacific Western, EC Comm. 4 ..... 672 8210
Fresno County (Kettleman North Dome)—
KNDA, 341-30J 216 10910
Kern County (Coles Levee)—
Richfield, KCL A-45-28 ..... 795 9376
Kern County (Kern Front)—
General, Young 46..... 96 1951
Kern County (McKittrick)—
Standard, No. 32 ..... 158 2313
Los Angeles County (Aliso Canyon)—
Tide Water, Porter 5 .....2105 6075
Los Angeles County (Del Valle)—
R. E. Havenstrite, Lincoln 5 .....1060 6115
Los Angeles County (N'west Wilmington)—
A. S. Johnston Drilling Co., No. 41 78 3623
Los Angeles County (Wilmington)—
Atlantic No. 27 3680
Crevolin & Mobeg, Crevolin 1 ..... 135 3710
C. R. Devine, No. 1 ..... 26 5650
Pacific Western, Sec. 2 3395
Petromont Oil Co., Wilmington 2 . 80 3720
Santa Barbara County (Santa Maria Valley)—
Bel-Air Oil Co., Twitchell 1 ..... 800 5375
Ventura County (Ventura Avenue)—
Shell, Taylor 141 .....1155 8288
OLD WELLS DEEPENED
Kern County (Fruitvale)—
Meridian Oil Co., Fee 1 (otd 2950) 85 3695
Los Angeles County (Long Beach)—
Shell, Cherry Hill 11 (pd 3950).... 109 4160

*Failures; †Junked; ¶Million cu. ft. gas.

Los Angeles County (Richfield)—
Welco Oil Co., No. 1 (pd 4450) ... 50 4970
Los Angeles County (Santa Fe Springs)—
Shell, GHN 8 (pd 4535) 106 6508
Ventura County (Ventura Avenue)—
Tide Water, VL&W 30 (otd 6967). 222 7100

Illinois

Bond County—
C. H. Harrison, Bourman 2, sw sw ne 19-4n-4w ..... * 741
Regent Oil, Harwood 2, nw nw se 36-7n-4w ..... * 927
Christian County—
Wm. Marlow et al, Howell 1, se se ne 26-15n-2w ..... * 2016
Clay County—
C. Speed et al, Weber Hrs. 1, n½ ne ne 25-5n-8e..... * 3148
National Ref., Easton 1, se se nw 26-4n-7e 482 2329
Clinton County—
Ross Drlg., Vogel 1, sw sw sw sw 9-1n-2w ..... * 1155
Crawford County—
Fuller, Jones 1, se sw nw 7-5n-11w * 1395
Edgar County—
Meyers, Courtney 1, ne ne nw 14-12n-14w ..... ¶1.5 590
Monarch Oil, Pinnell 1, se se sw 14-12n-14w ..... * 407
Zink et al, Hunt 1, ne ne ne 14-12n-14w ..... * 390
Edwards County—
Superior, Kiley 3, nw sw nw 7-2s-14w 70 3150
Fowkes 1, e½ ne sw 7-2s-11e.... 680 3156
Fowkes 3, e½ sw se sw 7-2s-11e. 898 3190
Kiley 4, ne nw se se 7-2s-11e.. 145 3160
Effingham County—
Jansen, Burk 2, e½ sw nw 27-6n-5e 20 2295
Fayette County—
Carter, Morton 4, se ne nw 9-7n-3e * 1603
Texas, Buff 2, se se sw 30-7n-3e... 84 1578
Jarvis & Marcell, Walker 13, se ne nw 31-7n-se..... * 1839
Franklin County—
Shell, Doty et al 11, sw nw ne 25-6s-2e 140 2145
Wegener, CW&F Coal "M" 2, ne se se 26-6s-2e 225 2140
Adkins, Lager 2, ne se ne 35-6s-2e 453 2152
Orient Coal Co. 4, sw sw nw 24-ns-2e 18 2103
Auten 2, se ne nw 25-6s-2e..... 130 2145

Menhall, Stalcup 6, sw ne se 23-6s-2e 320 2069
Stalcup 7, ne ne se 23-6s-2e.... 250 2110
Gibson-Jennings, Simpson Hrs. 3, e½ se ne nw 25-6n-2e..... 253 2141
Gallatin County—
Toombs & Smith, Patton 1, nw se se 35-7s-8e ..... * 620
Ryan Oil et al, Crunk 1, ne ne nw se 9-8s-9e ..... * 2881
N. V. Duncan, Egypt T & T 3, se ne sw 16-8s-10e..... * 2910
Phillips, Egypt T & T 2, ne ne ne 16-8s-10e 11 2098
Crum & Turner, Muenstreman 1, sw nw ne 18-9s-8e..... * 2611
Hamilton County—
Seaboard, Garrison 2, n½ sw nw 27-3s-5e 188 3306
Texas Co., Johnson 1, c w p ne ne 34-6s-6e 170 3106
Clark 3, sw se nw 7-6s-7e..... 500 3000
Clark 4, ne sw nw 7-6s-7e..... 650 3006
Johnson 3, se nw se 7-6s-7e..... 347 2985
Edwards 2, sw se nw 11-6s-6e... 786 3076
Pure Oil, Cuppy 8, nw ne sw 6-6s-7e 844 2995
Fairweather 1, se nw sw 7-6s-7e 590 3035
Shell, Beargie 4, sw sw se 6-6s-7e.1122 2977
Dudley 1, se ne sw 7-6s-7e..... 51 3038
Ritcheson 1-A, nw sw ne 7-6s-7e 280 2985
Jasper County—
Pure, Richards 1, c e½ se se 7-5n-10e 679 2850
Byrnes 2, c w½ nw sw 8-5n-10e * 2875
Spraul 1, ne nw sw 18-5n-10e.. * 2855
Utterback 3, c w½ nw sw 29-5n-10e 1128 2875
Bennett "A" 1, c w½ se se 30-5n-10e 241 2856
Hauser 1, c w½ nw nw 21-6n-10e * 2855
Jefferson County—
Chris Pearson, Carpenter 3, sw sw ne sw 10-1s-2e 50 1968
Gulf, Eubanks 1, ne se sw 35-2s-1e 955 1960
La Salle County—
O. L. Greer, Sam Davis, Est. 1, sw sw sw 23-35n-2e..... * 986
Lawrence County—
Cannon, Ridgley 2, n½ se sw ne 1-2n-12w ..... * 450
Ken. Nat. Gas Co. Gruin et al 3, s½ ne ne 18-4n-10w.....¶.001 1134
Marion County—
Shell, Davidson 7-A, nw se ne 34-4n-1e 180 1366
Pope County—
Claro & Russey, Mayer 1, ne sw nw 29-11s-5e ..... * 1236

Summary of Drilling Operations in the United States, Week Ended August 16, 1941

	WELLS COMPLETED								*PERMITS FOR NEW WELLS				
		New Wells Drilled for Oil and Gas											
	Total for Week	Oil Wells	Gas Wells	Failures	†Miscellaneous	Initial Production	Total 1941	Total this Date 1940	This Week	Total this Month	Total 1941	Total this Date 1940	Year Total 1940
Alabama	.....	.....	.....	.....	.....	.....	1	3	.....	.....	.....	.....	.....
Arkansas	6	2	.....	4	.....	800	105	190	2	8	113	95	153
California	21	21	.....	.....	.....	9,294	747	728	23	42	722	687	1,042
Colorado	.....	.....	.....	.....	.....	.....	10	5	.....	.....	.....	.....	.....
Florida	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Georgia	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Illinois	94	66	2	24	2	20,222	2,282	2,501	124	215	2,876	2,867	4,532
Indiana	.....	.....	.....	.....	.....	.....	325	275	.....	10	104‡	.....	.....
Iowa	3	.....	.....	3	.....	.....	5	.....	.....	.....	.....	.....	.....
Kansas	52	36	4	12	.....	34,754	1,395	1,244	35	87	1,436	1,286	2,048
Kentucky	8	3	1	4	.....	529	189	204	.....	10	57‡	.....	.....
Louisiana	23	17	1	5	.....	2,515	884	1,077	43	87	1,110	1,060	1,658
Michigan	13	6	1	6	.....	6,063	503	797	11	29	532	720	1,093
Mississippi	4	3	.....	1	.....	2,035	113	120	.....	.....	.....	.....	.....
*Missouri	3	.....	1	2	.....	.....	36	8	.....	.....	9	3	26
Montana	.....	.....	.....	.....	.....	.....	118	117	.....	.....	.....	.....	.....
*Nebraska	3	3	.....	.....	.....	1,467	56	6	1	8	64	6	69
New Mexico	11	6	.....	5	.....	1,813	227	459	9	16	265	405	559
New York	30	19	.....	.....	11	159	554	671	.....	.....	.....	.....	.....
Ohio	32	4	15	8	5	52	1,022	563	.....	.....	.....	.....	.....
Oklahoma	62	36	2	23	1	10,016	1,337	1,378	61	123	1,401	1,185	1,888
Pennsylvania	67	50	5	1	11	55	2,313	2,369	.....	.....	.....	.....	.....
South Dakota	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	.....	7	8	.....	.....	.....	.....	.....
Texas	238	175	10	53	.....	92,988	6,331	6,663	61	223	7,382	7,491	11,170
Utah	.....	.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....	.....
West Virginia	16	2	13	1	.....	15	411	351	.....	.....	163	492	782
Wyoming	.....	.....	.....	.....	.....	.....	71	94	.....	.....	.....	1	1
Total this week	686	449	55	152	30	182,777	19,044	19,765	370	858	16,234	15,298	25,021
Total last week	678	455	57	150	16	175,834	18,358	19,186	488	488	15,864	15,775	25,021
Total this year	19,044	11,815	1,408	4,176	1,645	5,373,272	.....	.....	.....	.....	.....	.....	.....

* This tabulation includes those states where weekly data are available; figures for Missouri date from August 10, 1940: Nebraska from August 3, 1940.
‡ No data available before June 14, 1941.
† Includes old wells deepened, water-intake, gas input and salt water disposal wells.

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth
ILLINOIS—Continued		
St. Clair County—		
Tarlton Oil, Reichert 2, nw nw nw nw 34-1n-10w	100	697
Wabash County—		
S. W. Petrie, Schafer 1, se sw sw 14-1n-12w	*	19?3
H. B. Mortimer, Dager 1, nw ne se 31-2n-11w	*	2189
Shell, Hein 7, n½ nw se se 20-1n-12w	28	2053
Wm. Bailor, Friend 1, nw ne sw 21-1s-12w	125.	1997
Illinois-Mid-Cont., Floyd 1, nw nw ne se 20-1s-12w	141	2041
Taggart 1, nw nw se sw 21-1s-12w	*	2046
Sam Yingling, Casper Smith 1, nw sw ne sw 21-1s-12w	175	1994
Washington County—		
Gulf, Maschoff 3, nw se sw 10-1s-1w	162	1572
Wayne County—		
Wiser Oil Co., Hilliard 2, c n½ se sw 27-1n-6e	510	3089
Watson 1, c n½ se nw 34-1n-6e	1638	3084
Pure, Harrington 1, c e½ sw nw 12-1n-7e	351	3075
White County—		
Longhorn Oil, Helm 14, ne ne ne se 22-3s-14w	400	2171
J. W. Carter et al, Ford 1, sw ne nw 21-4s-14w	20	2939
Superior, Fitton 15, sw ne nw 23-4s-14w	160	2880
Fitton 4, s½ se se 28-4s-14w	403	2595
Fitton 13, se ne ne 28-4s-14w	250	2865
Fitton 14, ne ne nw 28-4s-14w	383	2860
Fitton 17, w½ ne nw 33-4s-14w	350	2600
Ryan Oil, Stokes 1, nw nw se 28-4s-10e	*	3260
Sun, Greathouse 31, se nw sw 33-4s-14w	72	2605
Sinclair-Wyoming, Donald 5, e½ se se sw 21-4s-14w	96	2860
Johnson 2, ne ne sw 26-6?-8e	18	3085
McKenzie 2, nw ne se 11-7s-8e	70	2733
Mitchell 4, ne nw se 11-7s-6e	105	2771
Clarence E. Brim, Higgins-Sisson 1, se se sw 24-6s-10e	125	2256
Magnolia, Sisson-Higgins 3, sw sw se 24-6s-10e	62	2262
Skelly, Karch 2, ne ne nw 24-6s-10e	65	2878
Yingling, Karch 1-B, ne ne sw 24-6s-10e	335	2031
Arrow Drlg. & Lambert, Mitchell 1, ne nw sw 11-7s-8e	213	2170
Carter Oil, Hamilton 1, sw sw ne 11-7s-8e	306	2175
Tide Water, Baker 2, sw se se 11-7s-8e	40	2771
Kingwood-Sinclair, Porter 2, nw sw sw 12-7s-8e	157	2949
N. V. Duncan, Baker 1, e½ ne nw nw 14-7s-8e	168	2913
GAS INPUT WELLS		
Fayette County—		
Carter, Rhodes 23-7, ne c sw sw 23-8n-3e	...	1533
Marion County—		
Texas Company, City of Centralia 90, w½ nw nw 4-1?n-2e	...	1874
OIL WELLS REWORKED		
Marion County—		
Magnolia, Harley 4, ne sw ne 31-2n-2e (otd 3376)	116	4498
Richland County—		
Delta Prod., Shan 1, c w½ sw nw 27-3n-9e (otd 3?59)	15	3136
White County—		
Sun, Greathouse 10, ne sw se 33-4s-14w (otd 2593)	12?	2610
Iowa		
Fremont County—		
J. A. Johnson et al, Lucas 1, sw ne se 28-70n-42w	*	1882
Guthrie County—		
F. E. Hunt et al, McConnell 1, c se se 11-78n-30w	*	1555
Taylor County—		
Smythe, McLaughlin & Comfort, Hook 1, c nw nw 18-69n-35w	*	1537
Kansas		
Barton County—		
Armer-Vernon, Hoffman 2, c e½ nw sw 18-16-11w	530	3334
Vickers, Morgan 1, c s½ se nw 22-16-12w	101	3374
Stanolind, Morrison "B" 2, csl se ne ne 26-16-13w	*	3434
Shell, Sausen "B" 1, se nw sw 12-16-14w	2338	3369
Carter, Kroutwurst 3, ne sw nw 10-17-11w	*	3372
Hogan 4, c e½ nw nw 11-17-11w	2113	3345
Hinkle et al, Wood 1, c s½ sw sw 12-19-11w	*	3411
Bastin, Schartz 1, c n½ ne se 21-19-11w	*	3290
C. E. Ash et al, Koch "B" 2, c e½ e½ ne 23-20-12w	*	3406
Butler County—		
Phillips, Orr 3, se sw se sw 1-25-3e	28	2699
Cities Service, Wilson 200, se sw se nw 8-25-5e	38	2019
Wilson 201, sw sec nw 8-25-5e	25	2022¾
Reetz 3, sw ne se 34-27-5e	*	3187
Varner 33, ne nw ne 17-28-4e	38	2013
Cromwell & Lewis, Reetz 3, ne sw se 34-27-5e	35	3118½
Ellis County—		
Amerada, Hadley "A" 1, c w½ sw nw 32-11-17w	234	3631
Ellsworth County—		
Cities Service, Kralik 3, c s½ nw nw 8-16-10w	3000	3319
Ash et al, Wilkens "B" 4, c n½ sw sw 18-17-9w	250	3270
Wilkens "B" 3, c s½ nw sw 18-17-9w	150	3267
Greenwood County—		
Brazil, Hillard 1, nec nw 27-27-11e	*	100
Jefferson County—		
W. Archie et al, Schroeder 1, c se sw 28-9-20e (pb 1468)	20	1472
Magnolia, Harris 1, c sw se 32-9-20e	¶11.25	1450
Joe Longwell et al, Bartlett 1, c nw se 33-9-20e	¶5.5	1462
Leavenworth County—		
A. & B. Pipe Line, Edmonds 1, c sw sw 34-9-20e	¶2.7	1447½

[*Continued on next page*]

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United States Well Completions—*Continued*

KANSAS—Continued

Marion County—

Company, Well and Location	Init. Prod. Bbls.	Depth
R. L. Mendenhall, Boyington 1, c s½ sw nw 15-17-4e	18	2377
Ring-Mac, Schick 6, c e½ se nw 33-17-4e	660	2408

McPherson County—

Winkler-Koch, Voth 1, c e½ ne ne 1-20-1w	*	2968

Norton County—

Cities Service, Federal Farm 1, sec 15-4-23w	*	3794

Pawnee County—

Amerada, Bowyer 1, c s½ se sw 12-20-16w (pb 3833)	3000	3840
Stanolind-Amerada, Smith "A" 1, c w½ sw se 13-20-16w	309	3859

Phillips County—

Lario, Lynch 1, c s½ se sw 24-4-20w	*	3848
Cities Service, Ray "A" 3, sw se se 32-5-20w	2535	3537

Pratt County—

Bay, Lonoux (Beck) 1, sec 12-28-12w	*	4330½

Reno County—

Simpson, Snowberger 1, sw se ne 21-23-10w	3000	3789

Rooks County—

Broadview, Beardmore 8, c s½ ne sw 2-9-16w	351	3257
Baxter "B" 1, c s½ se ne 3-9-16w	570	3182

Russell County—

R. H. Shields, Wineteer 2, c e½ nw se 19-13-14w	750	3288
Cities Service, Rogg "B" 2, c w½ sw se 20-14-13w	*	3272
Cities Service, Kuhnle 3, cel se sw sw 5-14-12w	332	3272
Cook 3, nec se 4-15-12w (pb 3230)	415	3293
Schartz 2, c w½ se ne 5-15-12w	277	3239
Stanolind, Letsch 1, c s½ sw se 4-15-13w (pb 3067)	3000	3327
Leader, Meharg 6, nec 18-15-13w	546	3010
Phillips, Maier 2, sw nwc ne 15-15-14w	30	3224
Texas, Keil 3, c w½ ne se 36-14-14w	1331	2967

Stafford County—

Bodine & Faulkner, Wilcut 1, nw se se 4-21-13w	3000	3413
Stanolind, Richardson 10, csl nwc sw 10-24-11w	1444	3829
Black 1, c e½ ne sw 25-24-12w	*	4140
Magnolia, Tretbar 6, c n½ se ne 12-24-11w	720	3735
Cities Service, Byer 1, c s½ se se 10-24-12w (pb 3989)	531	4021

OLD WELLS DEEPENED

Harvey County—

Sinclair Prairie, Ediger 4, sec sw 19-22-3w (otd 3540)	35	3562

Kingman County—

Skelly, Miles "A" 5, ne swc ne 30-27-10w (otd 3472 pb 4186)	¶35	4220

Stafford County—

Stanolind, Fuller 5, c s½ ne sw 11-24-11w (otd 3764)	3000	3805

Kentucky

Daviess County—

Vickers & Sargent, Maynard 1, 18-N-25	*	1600
J. C. Ellis, Vance 1, 15-N-29	520	174
C. E. Daugherty, Leet 6, 18-N-29	¶.1	1168

Henderson County—

Schneider & Gwin, Overfield 3, 25-O-25	5	671
Walter Sargent et al, Wahl 1, 8-P-27	*	1970

McLean County—

Wanna Oil, Ohio Valley Oil 1, 9-M-27	*	500

Ohio County—

J. W. Tuttle, Winsatt 1, 12-M-32	*	243
P. P. Murphy, Walker 6, 4-M-35	4	275

Louisiana Gulf Coast

Ascension Parish (Darrow)—

Humble, Gumbel 19	*	6940

Cameron Parish (Lakeside)—

Superior, Calcasieu National 1	43	10000

Cameron Parish (E. Hackberry)—

Magnolia and Union Sulphur, Watkins 49	12	3152

Evangeline Parish (Ville Platte)—

Continental, Ludeau I, Unit 30	228	10127

Iberia Parish (Fausse Point)—

Texas Co., State 9	276	8872

Iberville Parish (Bayou Blue)—

Navarro, Wilbert 9	*	2806

Jefferson Parish (Barataria)—

California Co., Fleming C-4	308	7652

Jefferson Parish (Westwego)—

Stanolind, Pitre 1	74	9091

St. Landry (Port Barre)—

Pan American, Garland 10	110	6071

St. Martin Parish (Anse La Butte)—

Stanolind, Bergeron 5	464	6489

Terrebonne Parish (Caillou Island)—

Texas Co., State 70	*	8069

North Louisiana

Bossier Parish (Bellevue)—

Premier Inv. Co., Wyche A-20, 14-19n-11w	35	410

Bossier Parish (Sligo)—

Triangle Drlg. Co., Murff 2, 19-17n-11w	70	3151

Caddo Parish (Pine Island)—

F. A. Griffin, J. H. Herndon 6, 22-21n-15w	250	1595
F. O. Penn, Thigpen 1, 31-21n-15w	50	1584
W. E. Stewart et al, McAnn-West 1, 31-21n-15w	20	1585

De Soto Parish (Logansport-Joaquin)—

Superior Oil Corp. of Okla., Lewis 1, 2-11n-16w	¶60	5028

La Salle Parish (Little Creek)—

H. L. Hunt, Tannehill & Gallagher 4, 31-9n-2e	165	2743

La Salle Parish (Nebo-Jena)—

H. L. Hunt, Goodpine F-51, 10-7n-3e	150	4380

La Salle Parish (Olla)—

Ark. Fuel Oil Co., Cockerham 1, 23-10n-2e	115	2375
H. L. Hunt, Goodpine F-31, 19-10n-3e	145	2441

Madison Parish (Wildcat)—

H. L. Hunt, Ayers 3, 18-15n-10e	*	3584

Sabine Parish (Converse)—

Jenkins & Meyers, Cassel 1, 25-9n-14w	*	2175

Michigan

Gladwin County—

Sun Tope 3, c s½ nw nw 36-17n-2w	45	3880

Gratiot County—

Darke Bros., Gladstone 1, sw nw sw 6-10n-3w	*	3288

Kalamazoo County—

Fisher-McCall, Borner 1, sw nw sw 3-2s-12w	*	1872

Montcalm County—

Belvidere Oil Co., Babick 1, sw sw sw 17-11n-5w	*	3600

Osceola County—

Taggart Bros., RC 22, c nw 20-18n-10w	¶11½	1190
Gordon Oil & Bolger, State 1, c s½ ne ne 29-18n-10w	3200	3529
Gulf, Wilson 2, ne nw se 30-18n-10w	1250	3577
Weber Oil Co., Gingrich 1, c s½ nw nw 31-18n-10w	1000	3660
Pure, Jewett 2, sw sw ne 31-18n-10w	550	3606

Ottawa County—

Louis Rose, Antvelink 1, sw sw nw 27-7n-13w	18	1893

Van Buren County—

Elmer Jackson, Fee 1, ne se ne 29-2s-16w	*	1025
N. R. Dodd, Bell 1, sw se nw 1-1s-14w	*	1296
Clapsaddle, McLain 1, sw sw nw 3-1s-14w	*	1351

Mississippi

Yazoo County (Tinsley Dome)—

Amerada, Stutts 4, 36-10n-3w	775	4714
J. P. Evans, Stutts 1, 31-10n-2w	790	5051
Hassie Hunt, Woodruff 1, 11-10n-3w	470	4740
Slick-Urschel, McGraw 1, 25-11n-3w	*	6528

Missouri

Caldwell County—

H. L. Scott, Smith 1, sec 24-55n-29w	¶	400
Smith 2, nec se 24-55n-29w	*	375

Clay County—

Ben I. Hall, Flanagan 1, nec nw 2-51n-32w	*	514

Nebraska

Richardson County—

Ohio, Bucholtz 5, nw se sw 17-1n-16e	706	2313
Skelly, Davisson 4, nwc ne 20-1n-16e	624	2335
Black-Gold, Bankers Life 1, c se sw 30-3n-16e	137	2671

Richardson County—

Henry Bollen, Bankers Life 2, c nw sw 30-3n-16e	*	2709

New Mexico

Eddy County (Wildcat)—

Bedingfield & Walker, Seale 1, sec 10-20s-27e	*	1925

Eddy County—

Comanche Drl. Co., Berry 15, swc ne 24-17s-27e	25	493
Danciger, Turner 12-A, nw ne ne 19-17s-31e	100	3399
J. H. Elder et al, Root 4, c nw sw 7-17s-30e	*	2720
J. E. Hughes et al, Brooks 5, sw se nw 19-17s-28e	*	564
Worth Drl. Co., Taylor 1-B, c sw nw 12-18s-31e (pb to 4290 ft)	8	4890

Lea County (Eaves)—

Gulf, Vinson-Ramsey 2, c e½ se ne 12-26s-36e	*	3177

Lea County (Maljamar)—

Barney Cockburn et al, Pearsall 10-A, c sw nw 33-17s-32e	696	3406
Johnny Cockburn et al, Miller 4-A, c ne sw 36-17s-32e	624	4192
Drl. & Explo. Co., Inc., Johns 2-B, c nw sw 24-17s-32e	360	4307

Lea County (Wildcat)—

C. B. King et al, State-Tidal 1, c nw nw 16-11s-38e	*	5310

New York

Allegany County—

Vosburg Oil Co., Green farm, Bolivar	10	1429
R. B. Moore et al, Curtis farm, Bolivar	6	1289
Brocaw farm, Bolivar	7	1263
G. O. Williams, Williams farm, Bolivar	6	1069
Messer Oil Corp., Miles farm, Bolivar	12	1439
C. M. Robinson et al, Robinson farm, Scio	4	1030
Star Oil Co., Neff farm, Wirt	7	1281
Triangle Oil Co., Hixon farm, Alma	10	1456
The Otsquago Corp., Pike farm, Alma	12	1463
Hardy & McBride, Garthwaite farm, Alma	15	1278
Bradley Prod. Corp., Monder farm, Alma	7	1359
L. E. Norton et al, Coats farm, Scio	7	1282
Bradley Bros., Inc., Withey farm, Bolivar	7	1420
Marsh Oil Co., Hamilton farm, Greenwood	8	1264
South Hill Oil Co., Harrington farm, Wellsville	5	1373
Bliven Hill Oil Co., Norton-McEwen farm, Amity	5	889
Bradley Prod. Corp., Coats farm, Wirt	9	1332
Daggett Oil Co., Brook farm Genesee	10	1387
Shaner & Dermitt, Swathout farm, Bolivar	12	1383

WATER INTAKE WELLS

J. A. Bucher, Hamshar farm, Bolivar		1329
South Bolivar Oil Co., McDelvey farm, Bolivar		1368
Tyler & Livermore, Root farm, Bolivar		1266
Messer Oil Corp., Miles farm, Bolivar		1474
Gilligan & Dermitt, Gilligan farm, Bolivar		1081
Helen Randall, Reid farm, Alma		1432
Bradley Prod. Corp., Fitz-Carroll farm, Bolivar		1389
L. H. Thornton et al, Smith farm, Willing		1178
Bliven Hill Oil Co., Norton-McEwen farm, Amity		862
L. H. Richardson et al, Wright farm, Scio		570
New York Oil Corp., Brown farm, Bolivar		1367

Ohio

Athens County—

Carpenter & Glazier, Kuhns 1	1	190
Kuhns 2	*	178
Ohio Fuel Gas, Ross 2	¶0.28	1017

Coshocton County—

Blackburn et al, Ashcraft 1	¶0.6	3001

Cuyahoga County—

Kime et al, Kinzer 2	¶2.5	2716
Crucible Steel Castings, Fee 1	*	2808

Harrison County—

East Ohio Gas, Cramblett 1	*	6004

Knox County—

Ohio Fuel Gas, Shultz 1	*	2776

Lawrence County—

Portage Producers, Cambria Clay Prod. 14	¶0.48	434

Licking County—

Ohio Fuel Gas, Maharg 1	¶3.5	2706
Thompson 1	¶1.6	2570
Innis Bros., Long 1	¶1.0	2565
Gail Earley et al, Gardner 1	¶0.72	2595

Medina County—

M. L. Parkard et al, Reid 1	35	586
Thornton Prod. Co., Ross 0-19	*	441

Meigs County—

Roush Bros., Roush 3	*	2100

Monroe County—

Graham Oil, Adams 2	¶0.07	2074

Muskingum County—

Mehowa O. & G., Offenbacher 2	¶4.1	4010
Ohio Fuel Gas, Floyd 1	¶0.6	4050
Atha Oil, Roberts 1	¶0.5	3380

United States Well Completions—*Continued*

OHIO—Continued

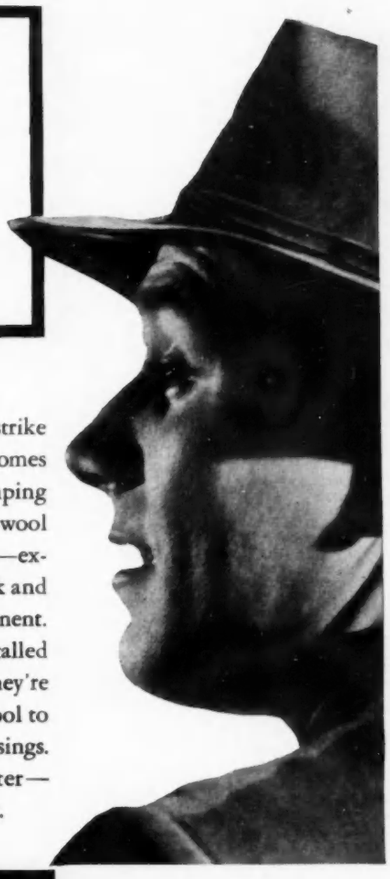
Company, Well and Location	Init. Prod. Bbls.	Depth
Noble County—		
Bingham et al, Wheeler 1	1	199
Perry County—		
Preston Oil, Pettit 3	¶0.05 and 15	3270
Washington County—		
H. A. Jones, Patterson 1	¶0.02	1810
Otto Heldman et al, Doyle 1	¶0.02	1344
Albert H. John et al, Benson 2	*	1540
Wayne County—		
Max Johnson et al, Finney 1	*	3010
Eckard Bros., Fee 1	¶0.02	714
GAS INPUT WELLS		
Medina County—		
Thornton Prod. Co., Ross 0-9	...	446
Ross 0-11	...	441
Ross 0-12	...	454
Ross 0-17	...	421
Monroe County—		
Luburgh Co., Swartz 27	..	693

Oklahoma

Company, Well and Location	Init. Prod. Bbls.	Depth
Bryan County—		
Pure, Little (106) 7, sw nw nw 34-5S-7E	174	5070
Caddo County—		
Pace, Prentice 2, nw nw ne sw 6-5N-9W	20	3572
Magnolia, McKenna 1, se se ne se 11-5N-9W	892	3318
Graham, Cook 1, ne se ne 35-5N-9W	*	407
Carter County—		
Samedan Oil Co., McCrory 1, sw ne se 5-1S-3W	25	3044
Kyle, Daugherty 10, ne sec sw 17-4S-2W	65	2122
Tide Water, Ward 5, se ne se ne 19-4S-2W	454	2130
Gibson & Jennings, Herrell "A" 9, se sw nw 20-4S-2W	513	2133
Carter Oil, Voorhees 11, nw nwc sw 21-4S-2W	185	2323
Choctaw County—		
C. F. Carter, Schull 1, se sw ne 20-6S-18E	*	915
Creek County—		
Riverland Oil Co., Roberts 1-A, ne se sw 5-15N-8E	*	3772
Zephyr, Sinclair 1, sec nw 34-17N-8E (pb 2733)	125	3692
Hill Bros., Drumheller 3-A, c sw se 28-17N-12E	¶3.1	1793
Garvin County—		
Alma, Ringer 1, nwc 2-3N-3E	*	2085
Cox & Hamon, Partin 5, se nw se 29-1N-3W (pb 2815)	44	3281
Partin 9, nw ne se 29-1N-3W	*	2774
Grady County—		
McCasland, Wham 1, ne sw ne 34-3N-5W	*	2626
Garfield County—		
Gulf, Skilling 1, c n½ ne nw 8-23N-4W	*	6339
Hughes County—		
Gardner & Green, Cahill 1-A, c e½ ne sw 2-6N-8E	*	1358
Royer & Farris, McKinney 1, ne sw nw 35-9N-9E	*	2101
Kiowa County—		
Shell, Watkins "C" 1, swc 17-7N-17W	*	1404
Argo, Ratliff 5, se nw ne 19-7N-17W	144	1085
Logan County—		
H. & H., Inc., Anderson 1, swc ne 28-15N-1E	*	80
Murray County—		
Ingling & Parker, Wolf 1, c nw sw 8-1N-2E	*	2496
Muskogee County—		
Link, Mathews 4, ne ne se ne 19-15N-15E	¶1	1471
Noble County—		
J. M. Henry, Schultz 1, ne sw ne 29-23N-1W	*	2525
Okfuskee County—		
Jones Assoc. Oil Co., Shultz 1, nw sw se 11-10N-8E (pb 3386)	43	3572
W. A. Smith, Douglas 1, csl sw nw nw 23-10N-11E	*	2536
Foundation, Brown 1, nwc ne 35-11N-8E	1035	3430
Shell, Van Pelt 1, nw ne nw 35-11N-8E (pb 4087)	548	4212
C. W. Titus, Canady 1, se nw ne 36-11N-8E	24	3447
Snyder et al, Berryhill 5, c s½ se nw 35-11N-9E	10	1500
Vierson, Hall 1, nwc ne 16-13N-7E	*	4210½
Okmulgee County—		
Pine, Carruth 8, se sec 18-13N-14E	*	490
F. D. Husner, Colbert 1-B, se sec 16-14N-14E	2	1176
Osage County—		
E. O. Platter, 3, se sw se ne 29-22N-9E (pb 2706)	12	2710
O. H. Pettigrove, 1, se ne sw 11-23N-11E	10	1570
A. G. Oliphant, 2, se sec nw 11-24N-10E	40	1892
Stanolind, 15, nwc se 18-27N-8E (pb 2520)	37	2525
Pawnee County—		
J. B. Greer, Armstrong 2, c sw nw 23-20N-7E	2	2840
Johnson O. & G. Co., Mann 14, sw sw ne sw 23-20N-7E (pb 2582)	10	2660
Pontotoc County—		
Joe Josephson, McCurry 1-A, swc nw 15-4N-6E	23	867
Cowley & Smiddy, White 1, nec nw 29-4N-6E	*	945
Pottawatomie County—		
W. A. Clark et al, Standridge 1, sec sw 10-7N-4E (pb 4000)	180	4025
Amerada, Whitehead 1, sw se se 27-8N-4E	196	3941
Big Chief et al, Earhart 1, nec sw 5-9N-4E	*	5264
Mudge, Hollingsworth "B" 1, nw se sw 24-9N-4E	106	4397
Wood et al, Billington "B" 1, se nw ne 26-9N-4E	80	4505
Seminole County—		
Mid-Continent, Ferguson 7, nw sw sw 18-7N-8E	35	1519
Tayache 8, ne ne sw sw 24-9N-6E	*	2458
P. J. McIntyre, Hanning 1, swc ne 2-9N-7E	*	3650
Stephens County—		
Ray Eby, Harley 12, ne se ne ne 24-2S-4W	11	416
Armor Oil Co., Wade 7, c sw ne 11-2S-8W	4	1525

[*Continued on next page*]

"ANY DRILLER'S FOOLISH NOT TO BE READY FOR BOTTOM WATER!"



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Eagle Durable—for low speed and pressure conditions

United States Well Completions—*Continued*

OKLAHOMA—Continued

OLD WELLS DEEPENED

Company, Well and Location	Init. Prod. Bbls.	Depth
Carter County—		
Dixon & Lausen, Woodsworth 2, nw ne nw nw 20-4s-2w (otd 2021)	1542	2208
Woodsworth 3, sw ne nw nw 20-4s-2w (otd 1972)	1272	2123
Woodsworth 4, nw se nw nw 20-4s-2w (otd 1967)	2100	2055
Jackson County—		
Aloma, Robertson 6, nw sw se 15-1n-20w (otd 1404)	5	1500
Okfuskee County—		
Klingensmith, Fier 5, ne swc ne 11-10n-11e (otd 2101)	*	2587
Doak & Hughes, Kirk 1, nec 21-10n-11e (otd 2832)	*	2917
Okmulgee County—		
Gilbertson, Rentie 1-A, nw sw nw nw 35-15n-14e (otd 1475)	*	1601
Osage County—		
Pure, 165, sec sw 9-23n-8e (otd 2272)	48	2370

GAS-INPUT WELLS

Okmulgee County—		
Powers & Quinlan, Adams 7, se nwc ne 8-14n-12e	..	2199

Pennsylvania

BRADFORD DISTRICT

Starr & Wingrove, Potter	3	...
Tapp, Gallets & Buffington, Trs. fee	3	...
Messer Oil Corp., Redfield	1½	...
Forest Oil Corp, 2 wells	2	...
Forest Petroleum Corp, 2 wells	2	...
Niagara Oil Corp., 5 wells	5	...
Bradford Transit Co., 31 wells	31	...
Glenn McCool et al, Wright	1	...
Grant & Mohan Oil Co., No. E, Bing 486-7	1	...
Rainer & Wooster, Kitts	1	...
Water Intake Wells—		
N. V. V. Franchot, M. T. Campbell	...	...
Messer Oil Corp.	...	...
Forest Oil Corp., 2 wells	...	...
Forest Petroleum Corp.	...	...
Niagara Oil Corp., 3 wells	...	...
Hendrick, Rice & Tuohy, Fisher	...	...
Esther Oil Co., Inc., Lamton	...	...
Merry Bros., Bing 310	...	...
Middle District—		
J. W. Osenider, Strong Oil Co.	½	...
George Hughus et al, William Beck	½	...
Titusville Trust Co. & Fleming, Lot 3192	½	...
Butler-Armstrong District—		
Hilderbrand & Dieter, Sarah McBride	1	...
Dewey Gas Co., Dewey estate	¶	...

SOUTHWEST DISTRICT

Armstrong County—		
Apollo Gas, Schaefer 1	¶0.85	1604
Local Co., Wray 1	¶0.17	1652
Fayette County—		
Fike & Spangy, Huston 1	*	880
Greene County—		
Manufacturers, Lemons 1	¶0.3	3430
Jefferson County—		
T. W. Phillips, Carrier 1	¶0.36	1354

Texas Gulf Coast

Brazoria County (West Columbia)—		
Texas Co., Abrams 41	100	5647
Phillips 25	524	5584
Brazoria County (Old Ocean)—		
Stanolind, First Capitol Bank 1	125	10750
Chambers County (Barbers Hill)—		
D. B. McDaniel, Wilburn 7 (DD)	410	3993
Chambers County (Fig Ridge)—		
Texas Co., Broussard 1	800	8600
Galveston County (Alta Loma)—		
Stanolind, Hulen 4	*	10532
Galveston County (Gillock)—		
Coats Pet. Co., Stewart 16	347	8932
Pan American, Kohfeldt 2	*	8377
Harris County (Eureka)—		
Jack Frazier, Hogg 8	*	8989
Harris County (Dyersdale)—		
Gillespie, Van Ezzell 1	284	4075
Harris County (Humble)—		
P. S. Cezeaux, Harrell 5	11	826
Harris County (Pierce Junction)—		
Rio Bravo, Settegast 18-B	118	4460
Harris County (Tomball)—		
Humble, Krahn 4	442	5560
Jefferson County (Fannett)—		
Gulf, Jackson 1-A	184	8323
Liberty County (Hull)—		
Gulf, Phillips 31	127.7	3068
Republic and Houston, Dobear 171	66	2109
Matagorda County (N. Markham)—		
Ohio, Carlson 7	204	7005
Orange County (W. Port Neches)—		
Phillips, Lutcher-Stark 7	125	4700

North Texas

Archer County (Hull-Silk)—		
King Oil Co.-Phillips, Wilson 14-E	328	3825
A. Massie et al, Wilson 9	300	3802
Archer County (Kadane-Griffith)—		
J. E. Kadane, Tr., Griffith 2-B	269	4379
Archer County—		
P. Boswell & E Van Deventer, White 1	8	492
G. J. Brown et al, Perkins 3-E	9	1033
Pet. Producers Co., King 17	95	1238
Archer County (Wildcats)—		
Craig & Wilson, Abercrombie 1	*	1300
C. L. Shive et al, Seay 1	*	1397
Baylor County (Mabelle)—		
British-American, Turbeville 10	105	2516
Clay County (Antelope)—		
Shell, H. Henderson 20	546	3170
Clay County—		
G. Golden et al, 1st Texas Jt. Stock Bank 1-C	19	1137
G. W. Graham et al, Hansard 7	9	1168
Hansard 10	50	1188
Hansard 12	60	1148
Hansard 13	*	1230
C. Y. Gorman et al, Taylor 8	24	1134
Frank Wood et al, Taylor 1	*	1342
Cooke County (Wildcat)—		
Dickson Oil Co. & R. B. George, George 1	*	5790
Cooke County—		
H. E. DeLee et al, Rosson 2	20	1120
Trumter Pet. Corp., Stacey 15-A	15	752
Cooke County (Walnut Bend)—		
Sinclair Prairie, Best 19	152	4895
Haskell County—		
J. W. Crites et al, Hendrick 1	¶13	1489
Jack County—		
Paul Steed et al, Derrick 4	436	3073
Three Bee Inv. Co., Epperson 3 (pb to 3058 ft)	208	3132
Montague County (Rogers & Rogers)—		
Stanolind, Miller 3 (pb to 5220 ft)	492	5374
Throckmorton County—		
T. A. Collier et al, Tutor 1	10	741
Wichita County (K-M-...)—		
W. H. Hammon-Hanlon & Buchanan, Fassett-Tutle 50	561	3990
Hanlon & Buchanan, Fassett-Tutle 29-G	†	3981
Huckelberry & Cline, Stone 3	710	3656
W. P. Lincoln & Leo Moore, Bradley 6	744	3760
Wichita County (KMA-Ellenberger)—		
Golding & Cochran, Preston 13-A-E	613	4488
Shell-Phillips, Griffith 26-E	2352	4425
Preston 17-A-a-E	612	4480
Preston 5-B-E	1040	4480
Tide Water et al, Ferguson 1-E	792	4332
Chas. Pettit 5-E	1240	4254
Chas. Pettit 7-E	684	4452
Wilbarger County (Fargo)—		
Amerada, Goodpasture 3-B	480	4638
Texas Co., Anderson 1 (pb to 4026 ft)	520	4652
Young County—		
S. O. Ewing & Homer Thompson, Courtney 1	*	920
Falcon Co., Higdon 1	19	3775
W. F. Palmer et al, Marshall 4	*	982
Panhandle-Ben Rankin, Slater 1	*	2850
Rannell et al, Jacks 10-B	3	566
Target Drl. Co., Cearley 1-A	*	599

West Central Texas

Brown County—		
Central Texas Gas Co., Davis 1	*	1904
Callahan County—		
F. E. McCreedy et al, Kelton 2	10	768
J. H. Welch et al, Ogle 1	*	398
Comanche County—		
O. L. Johnson et al, Barnes 1	*	1554
O. L. Stutenrouth et al, Kirk 1	50	2627
St. John & Choate, H. R. Smith 13	48	635
T. A. Smith 4	27	634
Eastland County—		
O. J. Dillingham et al, Jackson 1	10	2646
Jones County—		
Butler-Horne & Miller, Linderman 2	130	1930
C. J. Kleiner et al, Fields 1	*	2068
Ungren-Frazier et al, Akard 2-A	157	2138
Parker County (Wildcat)—		
J. L. Higginbotham et al, Wheeler 1	*	5255
Shackleford County—		
Daniels & Pardue, Davis 18	83	1585
Fain-McGaha Oil Corp., Morris 5	*	1560
G. T. Knight et al, Davis 1	141	1601
Roeser-Pendleton-Continental, Cook 5-A-118	75	1706
T. K. Simmons et al, Harvey 18	82	1734
Ungren-Frazier et al, Dyer 2-A	15	932
Stephens County (Wildcat)—		
G. R. McManis et al, Crudgington 1	*	119
Stephens County—		
F.H.E. Oil Co. et al, Ustick 1	¶17.7	3983

Texas Panhandle

Carson County—		
Cities Service, Burnett 44-A	¶35½	2320
Gray County—		
Danciger, Powell-Beck 21	649	2897
King Oil Co., Archer 11	260	3226
J. L. McMahon et al, Lovett 2	396	2931
Skelly Oil Co., Schafer 128	388	3254
The Texas Co., Brown 7	900	3280
Hutchinson County—		
J. Gordon Burch et al, Weatherly 11	1171	3110
Cree & Hoover, Haile 10	149	3065
Gulf & Panhandle, Dial 103	249	2990
J. M. Huber Corp., Harrison 1	100	3257
Kewanee Oil Co., Lewis 57	121	3015
Phillips, Cockrell 66	226	2935
Cockrell 79	302	3050
Perkins 34	624	2970
Power Pet. Co., Haile 10	258	3035
Shell, Harvey Sisters 25-B	282	3083
Stanolind, Watkins 27-A	197	3001
Texas Co., Pond 35	328	3050
Quinn 18	172	3091
Wheeler County—		
Teco Prod. Co., Stewart 4	103	2115

East Texas

Joiner Area—		
J. L. Collins et al, Pinkston 12	900	3619
Kilgore Area—		
R. H. Dearing & Sons, Laird 5	1200	3574
J. E. Kemp et al, Rider 4	800	3560
Rider 5	600	3559
Magnolia, Griffin 29	350	3605
J. Simmons et al, Martin 3	1500	3559
C. R. Starnes et al, Money 39	*	3730
Sun, Pentecost 20	1200	3590
Longview Area—		
Shell, Hampton 31	2500	3725
Anderson County (Wildcat)—		
Huddleston & Prater, Pfaff 1	*	1604
Limestone County (Barron)—		
Cannon Barron et al, Fee 1	¶16½	5666
Navarro County (Flag Lake)—		
Topaz Oil Co., Trammel 1-E	*	3154
Van Zandt County (Wildcat)—		
Harry Reynolds & Hickok, Bush 1	*	4653
Wood County (Hawkins)—		
Humble, Miss. Baptist Church 1 (22/100ac)	449	4777
R. B. Smith 1	427	4822
Wood County (Wildcat)—		
N. P. Powell et al, Markey-Miller 1	*	4924

Southwest Texas

CORPUS CHRISTI DISTRICT

Bee County (Heard)—		
Heyser, Heard & Clardy, Heard 1, outpost	¶ & 35	5309
Brooks County (Alta Mesa)		
Standard of Texas, Garcia 7-3	116	2671
Brooks County (Kelsey)—		
Magnolia, State-Marshall 12	650	4749
Calhoun County (Duck Bay)—		
Coronado Corp., Welder 28, outpost	*	5828
Colorado County (Garwood)—		
W. R. Davis, Brownson 5-A	750	6150
Hidalgo County (Nichols)—		
Royal O & G Co., St. Louis RR 2	450	3960
Jackson County (Francitas)—		
Francitas Gas Co., Skelly 1	¶20 & 100	8702
Jackson County (LaWard)—		
Humble, F. S. Robbins 7	1000	5228
Jackson County (Lolita)—		
Cox & Hamon, Scherffius 1	450	6403
Shell, Willoughby 4	300	5300
Jackson County (West Ranch)—		
W. S. Boyle, L. Ranch 5	500	5707
Humble, Vanderbilt-State 3	750	5728
Magnolia, West 173-A	900	5743
West 174-A	500	6176
Jackson County (West Ganado)—		
Pure, J. R. Cravens 2	400	5480
Jim Wells County (LaGloria)—		
La Gloria, Unit 13	*	6903
Jim Wells County (East Premont)—		
Magnolia, Seeligson 19	500	5206
Jim Wells County (Sandia)—		
O. W. Kiliam, Wade 17	*	5250
Jim Wells County (Wildcat)—		
Howeth & Wilcox, Adams 1, new field	350	5185
Lavaca County (Wildcat)—		
Herton Oil Co., Hahmann 1	*	6427
Live Oak County (Oakville)—		
Simmons, Reagan 2-C, extends field 1½ mi	40	2751
Live Oak County (White Creek)—		
H. Coquat, Holland & Smith 2	*	1558
Live Oak County (Wildcats)—		
E. M. Jones, West 3-B, opens new field	186	9733
Rotary Drl. Co., Sugg 1	*	4562
Nueces County (Agua Dulce)—		
R. H. Hawn, Wofford 2	650	7085
Wofford 1-B	¶20	7070
Texon, Horne 2	650	7034
S. E. Wilson, E. M. Wilson 1	*	7250

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth
Nueces County (Chapman)—		
Seaboard, Chapman 10	¶30	7750
Nueces County (Clara Driscoll)—		
E. A. Graham F. I. Gandy 3-A	350	5980
Nueces County (Clara Driscoll South)—		
Texas, Richardson 3	150	5505
Nueces County (Bentonville-King)—		
Southern Minerals, Walker 12	25	6412
Nueces County (Minnie Bock)—		
Tom Graham, Rutland 1	150	3808
Nueces County (Shield)—		
Mills Bennett, Lewis 1	¶25 & 50	7035
Nueces County (Wildcat)—		
Forest Dev. Corp., Keemel 1	*	6000
San Patricio County (Midway)—		
Stanolind, Corpus Bank 2-B	27	5385
San Patricio County (Odem)—		
Wellington, Parker 1	500	5430
OLD WELL DEEPENED		
Jackson County (Ganado)—		
Texas, Mortgage L&I Co. 1, (otd 5100)	200	6485
LAREDO DISTRICT		
Duval County (Casa Blanca)—		
Magnolia, Duval 5-88 outpost	*	2060
Duval County (Lundell)—		
Government Wells Oil Co., Lundell 54	125	1555
Jim Hogg County (Colorado)—		
Humble, King-Colorado 26-B	350	3013
King-Colorado 27-B	*	3003
V. F. Neuhaus, Trevino 4-E	550	2947
McMullen County (Wildcat)—		
W. M. Stephenson, Jacob 4	*	502
Starr County (Rincon)—		
Continental, Slick 50-A	¶65	4298
Slick 87-B	500	4185
Wherle 1	450	4450
Starr County (Sun)		
Sun, Montalvo 11-A	750	4875
Starr County (Wildcat)—		
Stewarts, Downs 1	*	2550
Webb County (Killam)—		
O. W. Killam, Garcia 17	72	2065
Webb County (Wildcat)—		
Magnolia, Duval 1, League 2	*	4163
H. E. Murray, Adami 1	*	1139
D. J. Moss, Gilbert 1	*	2800
Zapata County (Lopeno)—		
Venture, Ramirez 2	¶25	2985
SAN ANTONIO DISTRICT		
Bastrop County (Lentz)—		
Wiegand Bros., Lentz 1, outpost	*	2502
Bexar County (Alta Vista)—		
Kurt Petzold, Kelso 2	*	1200
Bexar County (Gas Ridge)—		
Southwest Drl. Co., Covel 23	2	448
Bexar County (Wildcat)—		
G. S. Bigby, Krugel 1	*	1110
Caldwell County (Luling)—		
Danish American, Cosey 8	24	2165
Caldwell County (Wildcat)—		
Nienaber et al, Eiband 1	*	2279
Gonzales County (Wildcat)—		
Brown & Stoddard, Voight 1	*	4530
Guadalupe County (Elm Creek)—		
W. L. Marshall, Thomas 6	2	846
Medina County (Chicon Lake)—		
V. T. Fearis, Medina 3	3	432
Medina 9	5	447
Real County (Wildcat)—		
Walter Gant, Schreiner 1	†	5230
Wilson County (Wildcat)—		
Shell, Ridout 1	†	5408

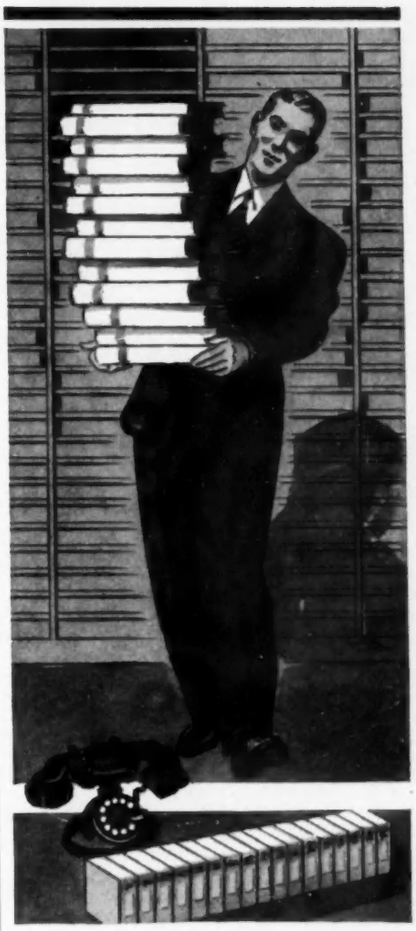
West Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Andrews County (Wildcat)—		
Mascho Oil Co., University-Texaco 1	*	4933
Cochran County (Wildcat)—		
Helmerich-Payne et al, Slaughter 1	*	4895
Cochran County (Slaughter)—		
Atlantic, Boyd-Humble 18	1495	5060
G. P. Livermore, Boyd-Texaco 6	1063	5064
Crane County (Gulf-Waddell)—		
Gulf, Henderson 27	4752	3552
Crane County (Sand Hills)—		
Humble, Tubb 57	476	4400
Magnolia, Lea 3	349	4569
Crane County (Sand Hills Deep)—		
Gulf, Waddell et al 25	2451	5651
Crockett County (Crockett)—		
Lynch Oil Co., University-Skelly 1	172	1460
Crockett County (Soma-Noelke)—		
J. S. Pittman-Geo. Atkins, Noelke 1-E	4518	1543
Crockett County (Wildcat)—		
Moore Bros. & Olson Oil Co., Halff 1	*	1036
Ector County (Foster)—		
Atlantic, Johnson 7-E	970	4237
Forest Dev. Corp., Moss 6-H	411	4235
M. A. Grisham et al, Henderson-Humble 1	531	4360
Sinclair Prairie, Johnson 5-B	438	4235
Palmer 2	437	4253
Texas Co., Johnson 2	828	4140
Ector County (Goldsmith)—		
Gulf, Goldsmith 363	627	4254
Ector County (North Cowden)—		
Sinclair Prairie, Johnson 12-C	1310	4182
Johnson 10-E	1593	4177
Stanolind (was Barnsdall), Smith 23	271	4380
Stanolind-M. J. Delaney, Smith 3-B	89	4378
Gaines County (Cedar Lake)—		
Stanolind, Scanlan 1	360	4998
Gaines County (Seminole)—		
Amerada, Averitt 1-A	571	5260
Brown 1	323	5250
Gaines County (Wasson)—		
Continental, Moore 1-47	916	4990
Wasson 12-48	1143	4967
Hockley County (Slaughter)—		
Magnolia, Mallet 4-D	954	5002
Mallet 7-J	1462	5022
Stanolind, Slaughter 16-A	1158	5009
Slaughter 27-B (1647-ac)	1403	5004
Texas Co., Mallet 8-E	1330	5038
Western States Gasoline Corp., Frazier 11	1877	5000
Mallet 5-B	1330	5035
Loving County (Wildcat)—		
Pinal Dome Oil Co., Fee 1	*	5373
Pecos County (Abell)—		
Magnolia, Gerety 1 (pb to 5284)	¶68	6292
Magnolia & Stanolind, McKee-Tex-Mex 3	1244	5394
Pecos County (Lehn)—		
Burk Roy. Co., Sullivan 1-C	112	1713
Pecos County (Wildcats)—		
Phillips, Nutt 2	*	2584
Pure, Fraser 1	*	417
Terry County (Slaughter)—		
Gulf, Mallet 8	718	5025
Upton County (Gulf-McElroy)—		
Gulf, Crier-McElroy 54	949	3022
Ward County—		
Gulf, Estes 148	*	3096
O'Brien 179	99	2668
O'Brien 181	1077	2782
O'Brien 182	599	2771
Winkler County (Hendrick)—		
C. V. Lyman et al, Cowden-Cities Service 3-A	609	3035
Winkler County (Keystone)—		
Parker Drl. Co., Ward 1	250	3295
Texas Co., Campbell 4	251	3345
Yoakum County (Wasson)—		
Drilling & Explo., Inc., Roberts-Shell 1-A	248	5200
Mabee O&G Co., Kiel 3	141	5285
Sinclair Prairie, Willard 6	1348	5285
Willard 8	953	5300

West Virginia

Company, Well and Location	Init. Prod. Bbls.	Depth
Boone County—		
South Penn, Yawkey-Freeman 62	¶	2946
Braxton County—		
Hope Nat. Gas, Brown 8537	¶0.05	2763
Cabel County—		
Meabon & Jones, Myers 1	¶0.15	3419
Calhoun County—		
Yoak & Brown, McDonald 1	12	1973
Clay County—		
Joe Rubin et al, Wetherell Est. 1	¶0.5	1854
Doddridge County—		
R. J. Braden Co., Martin 1	¶0.03	2616
Jackson County—		
McIntosh & Grim, Winters 1	¶0.76	5090
Kanawha County—		
South Penn, Monk 1	¶2.08	4927
Ray-Salyers 1	¶0.13	5053
Lincoln County—		
Sweetland Land & Mineral, Smith 4	¶0.06	3536
Marshall County—		
Guy B. & A. G. Patterson, Hicks 1	¶0.05	3108
Putnam County—		
Massey O. & G., Johnson 1	¶0.14	2104
Ritchie County—		
D. A. Cronin, Hatfield 1	*	1952
Upsher County—		
Pitts. & W. Va. Gas, Brake 7838	¶0.05	4560
Wayne County—		
Hamilton Gas, Chinn 1	¶0.26	2934
Wood County—		
H. P. Uhl, Reynolds 8	3	626

HENRY N. GREIS, president of Deep Rock Oil Corporation, Tulsa, announced that should the draft be extended, employes of this company who are now in service or who have enlisted, will have jobs open for them on their dismissal. He stated "Our promise to our employes will be for the full term of the emergency and their jobs will be available upon their return from service." He further stated that the group insurance will be kept in full force by the company.



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ABSTRACT SERVICES

WILDCAT REPORT
New Starts and Completions

ALABAMA

FIRST REPORTS

Madison County—F. F. Mellen et al's Baldridge 1, ne ne nw 8-1s-1e, rig.

Monroe County—Vaughey & Andrada's W. S. Moore 1, c nw 27-7n-5, lcn.

ARKANSAS

FIRST REPORT

Clark County—Coker Oil Co.'s McMillan & Cane 1, sw ne ne 34-10-19, dr.

COMPLETIONS

Columbia County—L. L. Prock's Young 1, ne se 21-15-21, abnd 4006 ft.

Clark County—Coker & Grieves' Williams 1, ne ne 7-11-20, dry, abnd 1765 ft.

Jefferson County—Patterson & Stratton's Stratton 1, se nw ne 35-6-9, abnd 1693 ft.

St. Francis County—D. T. Hargraves' Peters 1, ne ne 21-4n-1w, abnd 2500 ft.

CALIFORNIA

FIRST REPORTS

Kern County—Devils Den Oil Co., No. 1, 24-25-18, lcn.

Los Angeles County—Rosemead Corp. No. 1, 32-1-11, lcn. Imperial Corp., Rolland Lee 1, 25-2-16, lcn.

Sonoma County—Trico Oil & Gas Co., Miller 1, 30-5-6, lcn.

ILLINOIS

FIRST REPORTS

Champaign County—J. H. Wall's Baird 1, 80 ft n of nw nw nw 9-18n-10e, dr.

Clay County—Delta Prod. Co.'s Crockel 1, s½ sw se 34-4n-8e, lcn.

Coles County—Meyers' Ashmore 1, se c nw sw 28-13n-14w, dr. William Thomas' Taylor 2, se sw sw ne 33-14n-10e, lcn.

Jasper County—Pure's Wagner Consol. 1, sw nw nw nw 11-6n-10e, lcn.

Jefferson County—Nation Oil Co.'s Chesnik 1, sw nw se 26-2s-1e, dr.

Lawrence County—W. D. Anderson's Stockman Hrs. 1, nw sw sw 7-2n-12w, dr.

Marion County—Texas' Kagy 1, 10 ft e of c s½ sw ne 7-2n-2e, dr.

Morgan County—Magnolia's Keplinger 1, sw sw se 28-13n-8w, lcn.

Wabash County—Harry B. Mortiner's Dager 1, nw ne se 31-2n-11w, completed.

White County—W. F. Catlett's Calvert 1, se se nw 32-5s-10e, dr. Ryan Oil Co.'s Westergard 1, nw nw nw 30-6s-11e, lcn.

COMPLETIONS

Bond County—Regent Oil's Harwood 2, nw nw se 36-7n-4w, abnd 927 ft.

Christian County—Wm. Marlow et al's Howell 1, se se ne 26-15n-2w, abnd 2016 ft.

Clay County—C. Speed et al's Weber Hrs. 1, n½ ne ne 25-5n-8e, abnd 3148 ft.

Edgar County—Meyers' Courtney 1, ne c nw 14-12n-14w, gas sd 438-70 ft. Td 590 ft, 1.5 MG. New pool disc. Zink et al's Hunt 1, ne ne ne 14-12n-14w, abnd 390 ft.

Gallatin County—Toombs & Smith's Patton 1, nw se se 35-7s-8e, abnd 620 ft. Crum & Turner's Muenstreman 1, sw nw ne 18-9s-8e, abnd 2611 ft.

Hamilton County—Texas Co.'s Johnson 1, c w½ ne ne 34-6s-6e, Aux Vases 3058 ft, td 3106 ft, 170 bbls, Walpole pool extension.

La Salle County—O. L. Greer's Davis Est. 1, sw sw sw 23-35n-2e, abnd 986 ft.

Pope County—Claro & Russey's Mayer 1, ne sw nw 29-11s-5e, abnd 1236 ft.

Richland County—Delta Prod.'s Shan 1, c w½ sw nw 27-3n-9e, otd 3059 ft, td 3136 ft, McClosky 3036-3050 ft, 15 bbls oil.

Wabash County—H. B. Mortimer's Dager 1, nw ne se 31-2n-11w, abnd 2189 ft.

White County—Ryan Oil's Stokes 1, nw nw se 28-4n-10e, abnd 3260 ft.

KANSAS

FIRST REPORTS

Cowley County—Palmer & Continental's Defore 1, se sw se 23-30-3e, dr.

Greenwood County—Winkleman & Abels' Hillard 1, nec nw 27-27-11e, dr.

Jefferson County—Sifers et al's Leonard 1, c se sw 9-10-19e, dr. Workman & Sherrod's Riling 1, swc se 22-10-19e, dr. Lauring et al's Petrie 1, ne se se 19-10-20e, dr. Mosbacher et al's Stroud 1, c sw ne 20-10-20e, dr.

Leavenworth County—Max Cohen's Decker 1, nw sw ne 12-8-20e, dr.

Norton County—Cities Service Oil Co.'s Boucher 1, nec 13-4-23w, dr.

Pawnee County—Max Cohen et al's English 1, swc ne 1-21-15w, dr.

Rice County—Continental's Johnson 1, sw nw ne 28-20-6w, dr. Rocket Drlg. Co. et al's Shepherd 1, c w½ nw nw 6-21-9w, dr.

Russell County—Helmerich & Payne et al's Jennrich 1, c w½ nw se 13-12-15w, dr.

COMPLETIONS

Barton County—Branine & Holl's Rexroot 1, c e½ ne se 22-17-13w, 2 mi s Ainsworth, Anhydrite 815 ft, Topeka 2810 ft, Dodge 3072 ft, Lansing 3158 ft, Conglomerate 3395 ft, Arbuckle 3450 ft, abnd 3500 ft.

Butler County—Clyde Barker et al's Hannebohn 1, ne sw se 15-24-4e, 1½ mi e King pool, abnd 80 ft. Adair & Morton et al's Piper 1, ne nw ne 36-29-4e, 2 mi ne N. Rock pool, Lansing 1845 ft, Kansas City 2227 ft, Mississippi 2850 ft, abnd 2870 ft.

Leavenworth County—E. V. Jackson et al's Fevurly 1, c sw se 1-9-20e, 6 mi ne McLaughlin pool, base Oswego 570 ft, Bartlesville sd 1301-03 ft, Mississippi 1370 ft, hfw, abnd 1501 ft.

Russell County—Ruso Drlg. Co. et al's Phillips 1, se ne ne 6-14-13w, 3 mi e Russell pool, Anhydrite 820 ft, Topeka 2730 ft, Lansing 3028 ft, Sooy 3304 ft, Arbuckle 3325 ft, abnd 3334 ft. Central Pet. Co. et al's Gustason 1, c s½ se nw 14-15-12w, Gustason pool disc, Anhydrite 690 ft, Topeka 2585 ft, Lansing 2932 ft, Arbuckle 3244 ft, td 3257 ft, 163 bbls, 39 gr.

Stafford County—Elbar Oil Corp.'s Curtis 1, nec 18-25-13w, 3 mi e Jordan pool, Topeka 3110 ft, Lansing 3680 ft, Viola 4102 ft, Simpson 4232 ft, Arbuckle 4290 ft, abnd 4325 ft.

Trego County—W. M. McKnab & Phillips Pet. Co.'s Mattke 1, c w½ nw nw 17-12-22w, 4 mi e Wakeeney, Topeka 3400 ft, Lansing 3630 ft, Simpson 4095 ft, Arbuckle 4119 ft, abnd 4150 ft.

KENTUCKY

COMPLETIONS

Daviess County—Vickers & Sargent's Maynard 1, 18-N-25, abnd 1600 ft.

McLean County—Wanna Oil's Ohio Valley Oil 1, 9-M-27, abnd 500 ft.

NORTH LOUISIANA

FIRST REPORTS

Catahoula Parish—Roy Fisher's Bradford 1, sw nw 29-7n-5e, mat.

Winn Parish—H. L. Hunt's Goodpine F-2, nw se 13-9n-3w, sp.

COMPLETION

Madison Parish—H. L. Hunt's Ayers Timber Co. 3, c ne se 18-15n-10e, abnd 3584 ft.

LOUISIANA GULF COAST

FIRST REPORTS

Palequemines Parish—Phillips Pet. Co.'s State 2-396, sec 47-20s-29e, lcn.

Rapides Parish—Marr et al's Lee 1. (Deepening of old wildcat.) Se sw 6-5n-3e, ru.

St. Mary Parish—Texas Co.'s State Cote Blanche Island 1, 23-15s-7e, lcn.

MICHIGAN

FIRST REPORTS

Antrim County—E. B. Strom's Rushton 1, nw se nw 23-31n-8w, rig.

Arenac County—Don Rayburn's Ort 1, ne ne nw 20-19n-4e, dr.

Cass County—O. B. Custance's Jewell 1, se se ne 30-5s-15w, rig.

Clare County—Sun's McKenna 3, c n½ ne sw 15-19n-3w, rig.

Osceola County—Taggart Bros.' Fry 1, c s½ 6-18n-7w, dr. Turner Pet. Corp.'s Gus Unit 1, sw ne ne 7-18n-7w, dr.

COMPLETIONS

Gratiot County—Darke Bros.' Gladstone 1, sw nw sw 6-10n-3w, Dundee 3225 ft, abnd 3288 ft.

Kalamazoo County—Fisher & McCall's Borner 1, sw nw sw 3-2s-12w, Traverse 1497 ft, abnd 1872 ft.

Montcalm County — Belvidere Oil Co.'s Babick 1, sw sw sw 17-11n-5w, Dundee 3379 ft, abnd 3600 ft.

NEW MEXICO

FIRST REPORT

Eddy County—F. E. Baker and Bob Helms' State 1, c ne ne 32-19s-27e, lcn.

COMPLETION

Eddy County—Bedingfield & Walker's Seale 1, SEc 10-20s-27e, elev 3347 ft, abnd 1925 ft.

OKLAHOMA

FIRST REPORTS

Bryan County—Sinclair Prairie Oil Co.'s Irwin 1, c sw se se 18-6s-12e, dr.

Caddo County—Denver P. & R. Co.'s Sah-Cam 1, c se se 33-10n-10w, otd 10,084 ft, to dd.

Comanche County—W. H. Atkinson et al's State 1, c sw sw 16-2n-9w, dr.

Grant County—Texas Co.'s Breinholt 1, c e½ nw sw 36-25n-3w, dr.

Lincoln County — Mid-Continent et al's Evans 1, sw se nw 31-14n-6e, dr.

Logan County—Deep Rock et al's Murphy 1, nwc se 11-17n-2w, dr.

Okfuskee County—Helmerich & Payne et al's Williams 1-A, nwc se 16-11n-9e, dr.

Payne County—Atlantic et al's O Hara 1, c w½ ne nw 18-17n-2e, dr.

Pontotoe County—Mid-Continent et al's Wilson 1, sec ne 26-4n-5e, dr.

Pottawatomie County — Arab Pet. Co.'s Trausdale 1, nec nw 31-7n-3e, dr.

Seminole County—R. W. Simpson et al's

Reed 1, nwc sw 13-6n-6e, dr. Donmar Oil Corp.'s Smith 1, sec ne 29-8n-6e, dr.

COMPLETIONS

Creek County—Beal & LeVieux et al's Murray 1, sec sw 12-16n-7e, 2 mi se Olean pool, Bruner sd 960-1000 ft, hfw, Layton 1496-1510 ft, dry, Mississippi 3340 ft, Chattanooga 3622 ft, Misener 3648 ft, Sylvan 3674 ft, Viola 3685 ft, Dense 3714 ft, Dolomite 3717 ft, Wilcox 3749 ft, abnd 3768 ft.

Kay County—Alexander & Hauke's Kreger 1-A, sec ne 4-25n-2w, 3 mi n Thomas pool, otd 3705 ft, top Oswego 3950 ft, Miss Chat 4355 ft, abnd 4487 ft.

Jefferson County—B. L. Fain et al's Owens 1, c ne se 7-5s-8w, 5 mi sw Waurika, abnd 2202 ft.

Lincoln County—Dunnett Oil Co.'s Brown 1, nwc sw 17-15n-4e, 5 mi n Chandler pool, Checkerboard 3287 ft, Cleveland 3305 ft, Oswego 3914 ft, Prue 3979 ft, Verdigris 4060 ft, Skinner 4125 ft, Bartlesville zone 4264 ft, Brown lime 4460 ft, Mayes 4565 ft, Woodford 4755 ft, trace Misener, Hunton 4795 ft, Viola 4900 ft, First Wilcox 4984 ft, Second Wilcox 5035 ft, abnd 5080 ft.

Logan County—Olson Drlg. Co. and Phillips Pet. Co.'s Paulk 1, c n½ ne se 33-18n-3w, 10 mi nw Guthrie, Oswego 5290 ft, Mississippi 5665 ft, Woodford 5945 ft, Hunton 6040 ft, Sylvan 6070 ft, Viola 6132 ft, abnd 6417 ft.

Okfuskee County—Wilcox O. & G. Co.'s Moseley-Nevins 1, sec nw 4-13n-7e, 4 mi w Micawber, Hogshooter 1365 ft, Oswego 2675 ft, Prue 2680 ft, Vertigris 2790 ft, Skinner 2860 ft, Red Fork 3060 ft, Brown lime 3369 ft, Dutcher 3527 ft, abnd 3580 ft.

Pottawatomie County—Big Chief Drlg. Co. et al's Airhart 1, nec sw 5-9n-4e, 2 mi east Tecumseh Lake pool, Belle City 2410 ft, Calvin 4000 ft, Earlsboro 4520 ft, Unconformity zone 4595 ft, Miss. Caney 4630 ft, Mayes 4750 ft, Woodford 4850 ft, Hunton 4995 ft, Sylvan 5028 ft, Viola 5127 ft, Dense 5169 ft, Dolomite 5200 ft, First Wilcox 5240 ft, abnd 5286 ft.

TEXAS GULF COAST

FIRST REPORTS

Brazoria County—Humble's Houston Farms 1, Rattlesnake Mound area, Perry & Austin Survey A-108, lcn. Humble's Colley 1, Lot 4, 46.6-ac lease, J. M. O'Donnell Sur. A-474, sec 18, w of Alvin, lcn. Sterling's Shanks 1, ne flank Stratton Ridge, John Brown Survey, mim. A. T. Grabowski's Lowe 3, 23.2-ac lse Jno. McNeel lge, lcn. Lowe 4, 600 ft w Lowe 3, lcn.

Fort Bend County—W. L. Goldston's Coyle 1, Needville prospect, H&TC s 39 lcn.

Harris County—H. C. Tyrrell's Dixon 1, Cross Timbers area, M. T. Gammon Survey, abnd 4919 ft.

Tyler County—Navarro Oil Co.'s Reid 1, Emily Sanderson Sur, w of Hillister, waiting on rig. (Location originally made by O. C. Garvey.)

NORTH TEXAS

FIRST REPORTS

Clay County—W. B. Hamilton et al's Wineinger 1, nw se blk 45, Specht & McCutchin sur, rur.

Cooke County—H. E. Harvill et al's Chas. Clerr 1, m n se cor 80-ac tr, Henry Dixon sur A-335, lcn.

Young County—Kerlyn Oil Co.'s Hazelton 1, sw nw TE&L sec 1995, lcn.

COMPLETIONS

Archer County—Craig & Wilson's Abercrombie 1, swc nw blk 152, Harris subdiv, abnd 1300 ft. C. L. Shive et al's Seay 1, nwc sw blk 108, Harris subdiv, Gunsight 1355-57 ft, abnd 1397 ft.

Cooke County — Dickson Oil Co. - R. B. George's George 1, north cor E-40 ac of tr, Jas. Bradshaw sur A-29, 2½ mi s Sivells Bend, top Pennsylvanian 1042 ft, Strawn 3040 ft, Ellenberger 5745 ft, abnd 5790 ft.

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WEST TEXAS

COMPLETIONS

Andrews County—Mascho Oil Co.'s University-Texaco 1, c se nw sec 11, blk 13, elev 3255 ft, anhydrite 1770 ft, salt 1840 ft, Yates frosted grains 2880 ft, Grayburg lime 4175 ft, abnd 4933 ft.

Cochran County—Helmerich & Payne et al's Slaughter 1, nec labor 78, league 136, Armstrong CSL, elev 3831 ft, anhydrite 2248 ft, salt 2340 ft, 1st lime 3965 ft, abnd sul w 4828-95 ft.

Crockett County—Moore Bros. & Olson Oil Co.'s Halff 1, 1200 ft from s and 4900 ft from e lines I&GN sec 54, blk 1, abnd 1036 ft.

Loving County—Pinal Dome Oil Co.'s Fee 1, c w¼ of w¼ PSL sec 15, blk C-26, elev 3262 ft, top gray lime 5010 ft, Delaware lime 5245 ft, sand 5275 ft, abnd salt w 5366-73 ft.

Pecos County—Phillips' Nutt 2, sec nw T. & St. L. Ry. sec 17, blk 125, abnd in water 2579-84 ft. Pure Oil Co.'s Fraser 1, c nw sw T&P sec 43, blk 49, Tsp. 10, elev 3277 ft, abnd 417 ft.

SOUTHWEST TEXAS

FIRST REPORTS

Atascosa County—Briggs-Atascosa Co.'s Stevens 1, McCulloch sur, 4 mi se Verde, loc 4000-ft test.

Bee County—Heyser & Heard's Huddleston 1, Burk sur, 4 mi e Beeville, loc 6000-ft test.

Bexar County—Stanley & Hall's Brooks 1, J. de la Garza gr, 10 mi s S. A., dr 1200 on 1500-ft contract.

Dimmitt County—R. Mogford's Eardley 1, T. Sanchez sur, 1 mi sw Carrizo Spgs, mi 4000-ft test.

Duval County—H. Coquat's Southland 2-C, Agua Poquite Gr, 5 mi nw Benavides, loc 6000-ft test. Joe Palmer's Parr 1, Sur 13, 4 mi w San Diego, sp on 5400-ft test.

Jim Wells County—Earl Callaway's Fowler 1, La Trinidad Gr, 4½ mi s Ben Bolt loc 5700-ft test.

LaSalle County—Quintana's Washburn 1-B, Sec 86, 6265 ft sw Washburn fld, loc 6500-ft test.

Milam County—H. H. Coffield's Lowenstein 1, Allen sur, 1½ mi sw Rockdale, loc 1500-ft test.

San Patricio County—Texon Roy Co's Tutt 1, Blk 1, Sec 26, 7 mi ne Taft, loc 7000-ft test.

Travis County—O. G. Raesz's Noton 1, R. Hornsby sur, 5 mi s Manor, loc 1250-ft test.

Victoria County—Juanita Corp.'s Davies 1, Garcia Gr, 3 mi sw Inez, loc 6000-ft test.

Webb County—Magnolia Duval 2, League 1, 1400 mi nw Freer, loc 3000-ft test.

COMPLETIONS

Bee County—Heyser, Heard & Clardy's Heard 1, one mi s Heard field, dr to 5309 perf 4763-66 flowed 35 bpd dist large vol gas ⅛ 1800 tubing, 1050 casing, extends field.

Bexar County—C. G. Bigby's Krugel 1, Rodriguez sur, 10 mi s S. A., abnd 1110 ft.

Calhoun County—Coronado Corp's Welder 28, 1½ mi sw Duck Bay field, abnd 5828 ft.

Caldwell County—Nienaber's Eiband 1, 2 mi w Luling, abnd 2279 ft.

Jim Wells County—Howeth & Wilcox's Adams 1, Adams sur 6, dr to 5185 perf 4194-99 flowed 147 bpd ¼ 520 tubing, 1500 casing, gr 47.4, opens new field, 1½ mi s present Alfred field.

Lavaca County—Herton Oil Co's Hahmann 1, Wm Taylor sur, 3 mi se Moulton, abnd 6427 ft.

Live Oak County—E. M. Jones' West 3-B, dr to 9733 ft, perf 8920-44 ft, flowed 186 bpd ⅛ 4350 tubing, 4725 casing, 47.4 gr, water none, gas vol. 1,630,000 cu ft, opens new field in Carrizo sand, 4½ miles sw George West. Simmons Oil Co's Reagan 2-C, 1½ mi sw Oakville field, dr to 2751 ft, perf 2743-48 ft, flowed 200 gas, 40 bpd oil per day, ¼ ch 650 tubing 1200 casing. Extends field. Rotary Drl. Co's Sugg 1, Sur 111, 7 mi nw Tynan, abnd 4562 ft.

McMullen County—W. M. Stephenson's Jacob 4, John Fadden sur, 4 mi nw Calliham, abnd 502 ft.

Nueces County—Forest Dev Corp's Keemel 1, 1 mi ne Robstown field, abnd 6002 ft.

Real County—Walter Gant's Schreiner, Sec 5, 20 mi ne Leaky, junked 5230 ft.

Starr County—Stewarts' Downs 1, Javali Gr, 6½ mi nw Viboras, abnd 2550 ft.

Webb County—Mangolia's Duval 1, League 2, 15 mi w Freer, abnd 4163 ft. H. E. Murray's Adam 1, 1½ mi sw Adami field, abnd 1139 ft. D. J. Moss' Gilbert 1, Sec 264, 9 mi n Bruni, abnd 2800 ft.

Wilson County—Shell's (was Trio) Ridout 1, Brown sur, 7 mi ne Floresville, abnd 5408 ft.

EAST TEXAS

COMPLETIONS

Anderson County—J. A. Huddleston-U. W. Prater's Pfaff 1, west part 185-ac tr, Roland Allen sur, abnd 1604 ft.

Van Zandt County—Harry Reynolds & Hickok's Bush 1, swc 20-ac tr, Pleasant Young sur, elev 608 ft, Pecan chalk 2660-2810 ft, Austin chalk 3605-4042 ft, top Woodbine 4544½ ft, abnd 4653 ft.

Wood County—N. P. Powell et al's Markey-Miller 1, swc 59.9-ac tr, and H. H. Edwards sur, elev 384 ft, top Pecan 3223 ft, Austin chalk 4612-4725 ft, top Woodbine 4900 ft, abnd 4924 ft.

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MEN IN THE INDUSTRY'S NEWS

ALBERT H. WEISGERBER, 56, secretary and treasurer of Portland Pipe Line Company, died August 11 in Portland, Maine. He was in charge of the Portland office.

J. E. NELSON, H. A. Gidney, and Alan M. Scaife have been elected directors of Gulf Oil Corporation. All three are members of the finance committee. Nelson is vice president, treasurer and secretary of the finance committee, and Gidney is vice president and comptroller. Scaife formerly was chairman of the board of Pittsburgh Coal Company. This election increases the membership of the board to nine. Continuing members are W. L. Mellon, chairman; F. A. Leovy, vice chairman; J. Frank Drake, president; H. L. Stone, Jr., executive vice president and general counsel; W. V. Hartmann, vice president, and R. K. Mellon.

WILLIAM H. SPICE, chairman of the nomenclature committee of the South Texas Geological Society, has announced George West as the name for the new field discovered by Edwin M. Jones in Live Oak County.

HARRY LAWSON, formerly associated with Pete Wiggins, Jr., and associates in West Texas and Illinois, has joined Seaboard Oil Company as land man in West Texas, with headquarters at Midland.

W. BLAND OMOHUNDRO, veteran North Texas operator and drilling contractor, V. B. Omohundro and P. H. Lambert have organized Edge Oil Company, with headquarters at Wichita Falls.

J. B. H. HENDERSON, president of Oleander Petroleum Company, Dallas, in association with Fred Lehmann and J. W. Hassell, Jr., organized Survey Drilling, Inc.

GEORGE TURNER has been transferred from Oklahoma City to Kilgore, Texas, by Visco Products Company. He will assist Paul V. Hanlen, who has been transferred from Kilgore to Shreveport and placed in charge of the company's East Texas and North Louisiana operations. Hanlen has been associated with the oil industry in Texas, Louisiana and Arkansas for more than 20 years.

H. M. KIRK, resident geologist, The Atlantic Refining Company, is now based in Port-au-Prince, Haiti. At the present time, Kirk is home on vacation at Boseman, Montana.

WALTER W. DOSS, salesman, Baker Oil Tools Company, was killed in a car accident August 3 at Lubbock, Texas. Burial was August 6 at Houston.

COLONEL W. F. ROCKWELL has been appointed chairman of the nominating committee to select representatives to consult with the OPM on the transfer of automotive activities to the national defense. Rockwell is board chairman of Timken-Detroit Axle Company as well as president of Pittsburgh Equitable Meter Company.

D. R. BROWN, formerly president of O. C. S. Manufacturing Company, Coffeyville, Kansas, announces formation of The Multiscope, Inc., a new manufacturing firm organized at Topeka, Kansas, with capital of $100,000 with charter to do business in Oklahoma and Kansas. Officers are D. R. Brown, president; B. L. Berry, chairman of the board; E. F. Buckley, vice president; Eldon J. Lowe, secretary-treasurer and C. D. Welch, counselor. All officers reside in Coffeyville. The new firm has taken over the old plant of Kansas Oil Refining Company.

H. R. Cullen (right), president of Quintana Petroleum Corporation, directing running of tubing on Washburn 3, LaSalle County, Texas, the discovery of 11,042-foot production in Cretaceous. Oscar Neuhaus III, his secretary, is looking on.

HERMAN JONES, Austin attorney, has been named chief of the Gas Utilities division of the Texas Railroad Commission. Jones is a former member of the Texas Legislature, and for the past several years has been associated with the law firm of Moody and Robertson in Austin. Jones has an excellent background for his new work, having been familiar with Railroad Commission activities for several years.

DR. ALOIS CIBULKA, an engineer since 1925 at Humble Oil & Refining Company's Baytown, Texas, refinery, has resigned to devote his time to writing engineering information he has learned or compiled over a long period of work and research. Dr. Cibulka has just finished his first volume, "Design Handbook for Practical Engineers," and plans to start a second handbook this year. His objective is to consolidate engineering information.

C. R. ATHY has been named vice president of International Derrick & Equipment Company of Ohio. Affiliated with the Ideco organization since early stages of its history, Athy has been chief engineer for the past 10 years. During this time he was also in charge of research work and has developed many oil field equipment items. Athy graduated from Ohio State University in 1919 as chemical engineer. Before joining Ideco, he was associated with Buckeye Steel Castings Company and American Zinc Lead and Smelting Company.

L. E. ROELOFS has been named chief engineer of International Derrick & Equipment Company of Ohio, succeeding C. R. Athy promoted to vice president. Roelofs was formerly associated with American Bridge Company and was general manager of Rogers Structural Steel Company of Corry, Pa.

J. S. KIRKENDALL, geologist for Amerada Petroleum Corporation, has been transferred from Tyler to Midland, Texas. He was stationed at Bakersfield, California, prior to the Texas assignments.

I. B. McGARR, 71, retired drilling contractor and a pioneer in West Central Texas development, died of a heart attack August 5 while inspecting a Soma-Noelke pool property of his sons, Wilbur and George McGarr, both of Abilene and officials of the M. & M. Production Company.

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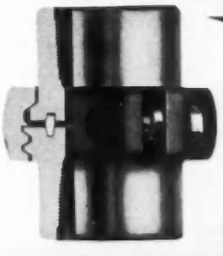

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ERIC G. SCHROEDER, for many years a partner and sales manager of Kibele Manufacturing Company, Dallas, has resigned and disposed of his interest in the firm to become associated with Franklin E. Bernstein in Lucey Products Corporation of Tulsa. Schroeder has been actively engaged with the Lucey organization since the first of the year and will continue his offices in the Continental Building at Dallas. He is vice president and a director of Lucey Products Corporation, in charge of Texas operations. Schroeder has been actively engaged in the oil equipment industry since 1928, first at San Antonio and then at Dallas, to which city he moved in 1935.

RUSH GREENSLADE, vice president and general manager, Gulf Oil Corporation, Tulsa, addressed the local chapter Rotary Club on August 13th, discussing "South America." He has been a frequent business visitor to this area.

CLAUDE BANTA, Gulf Coast sales manager for Hydril Company during the past several years, has been transferred from Houston to the company's headquarters at Los Angeles.

DR. GEORGE H. FANCHER, of the petroleum engineering department of the University of Texas, will speak on "The Nature of Drilling Muds from Super-Centrifuge and X-Ray Analysis" at a meeting of the Gulf Coast Section of the American Institute of Mining and Metallurgical Engineers, which will be held at College Inn, Houston, on August 18. Dinner will be served at 6:30 p. m.

CHAS. S. THOMAS, president of Foreman & Clark, has been named a director of Byron Jackson Company, succeeding the late Stuart S. Hawley.

DR. RUSSELL MORLEY OTIS has joined the engineering staff of Lane-Wells Company. A graduate of California Institute of Technology, his experience includes research work with Bell Telephone Laboratories, three years as director of research for Hughes Development Company, research work in color films, research and patent engineering work for Burt-Warner Power Corporation, wing-stress analysis work for Manta Aircraft Corporation, and independent research counselor and patent attorney.

J. COOKE WILSON, who entered the oil industry at Beaumont a few months after the Lucas gusher was brought in 40 years ago, and a pioneer operator in the Spindletop field, has been named general chairman of the Spindletop anniversary convention of the Mid-Continent Oil & Gas Association, to be held October 9-11 at Beaumont.

E. W. Gilbert and Bryan McAdams have been named vice chairman and secretary, respectively, of the convention arrangements committee. Chairmen of sub-committees are: W. C. Tyrell, attendance; T. R. Shumate, housing; John W. Newton, program; W. W. Leach,

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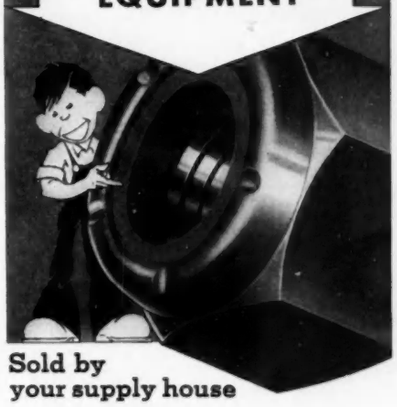

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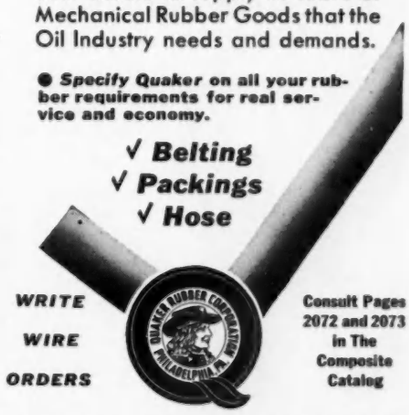

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See Page 1325 in COMPOSITE CATALOG, 1941

JUSTRITE MANUFACTURING CO.
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entertainment; Walter Casey, golf tournament, and Scott W. Myers, transportation. Clarence DeBusk and Karl D. Schwartz, Beaumont Chamber of Commerce, will serve as chairmen of publicity and registration. Members of the executive committee will include committee chairmen and George C. Morris, Chilton O'Brien, F. P. Dodge, Mike J. Welsh and C. R. Stevenson.

JACK SHANNON, vice president and manager of Snowden & McSweeney Company's Fort Worth district office, has announced that the company's general offices will be transferred from New York City to Fort Worth in October.

R. E. NELSON, JR., Texas Panhandle land man for Stanolind Oil & Gas Company, has been transferred from Amarillo to Fort Worth, where he will be assistant division land man. He will be succeeded by Otis Gammill of Fort Worth.

M. J. TENNES, Sr., chairman of the board of directors of Shafer Bearing Corporation, Chicago, died recently. He is survived by his widow, Ida B. Tennes; a daughter, Dorothy; and three sons, Captain Monte J. Tennes, Jr., president of Shafer Bearing Corporation, now on active duty in the U. S. Army Air Corps; Ray P. Tennes, secretary-treasurer and director of the Shafer Corporation; and Ensign Horace E. Tennes, also a director of the Shafer Corporation, now on active duty in the U. S. Navy Air Corps.

ROBERT B. WHYTE, general superintendent for Macwhyte Wire Rope Company, Kenosha, Wisconsin, has been elected vice president in charge of operations. He entered the wire rope industry in 1913, and became wire mill superintendent of the Macwhyte company in 1917. He was named general factory superintendent in 1925, and a director in 1937.

LARRY POWELL, geologist and engineer, has been transferred from the Findlay, Ohio, office of The Ohio Oil Company, to Mt. Pleasant, Michigan.

A. D. PEERY and J. H. Meredith have organized the Peery-Meredith Drilling Company with headquarters at Wichita Falls, Texas.

Telemetering and Supervisory Control Report Published

A report "Telemetering, Supervisory Control, and Associated Circuits," has just been published by the American Institute of Electrical Engineers.

Corrected to December, 1940, this report summarizes a wealth of information concerning the electric telemetering and supervisory-control systems currently in use or commercially available in the United States, and includes a detailed discussion of the interconnecting circuits suitable for such purposes.

Telemetering and supervisory control equipment, although electrical developments and widely used in the electric power industry, are finding their greatest potential field of application in non-electrical industries. In water, oil, gas, and other industries this equipment is playing a vital and economically important role in such operations as the remote metering, indication, or control of the levels, pressures, temperatures, flows, etc., of liquids, gases, etc. Supervisory equipment is particularly adaptable to the remote control and monitoring of any device that may be electrically operated. In addition to control features, remote indications of the positions or conditions of practically any device—such as switch positions, governor settings, gate or valve openings, bearing or winding temperatures, synchronization, etc., etc.—may be obtained. Arrangements for the telemetering of various quantities may be incorporated in control systems.

In recognition of this ever-widening field of application for telemetering equipment, the report has been prepared in such form and terminology as to make it readily useful to engineers in any branch of industry likely to be concerned with problems of remote measurement and control. Extensive tabulations giving comparative data are designed to enable a prospective or existing user of telemetering or supervisory-control equipment quickly to determine the type of apparatus best suited to his requirements.

All known commercial sources of telemetering and supervisory-control apparatus in the United States have been canvassed, and every effort made to present a complete picture of the instruments and systems available for the purpose. Material for this special publication was prepared by a joint subcommittee of the AIEE committee on automatic stations and the AIEE committee on instruments and measurements. The work is based upon a report compiled by an AIEE subcommittee in 1932, although the coverage has been extended and of course the information has been brought down to date.

The special publication "Telemetering, Supervisory Control, and Associated Circuits" is a 28-page 8½x11-inch pamphlet attractively printed on durable paper. Copies may be secured from AIEE headquarters, 33 West 39th Street, New York, N. Y.; price is 40 cents per copy to members (80 cents to nonmembers) subject to a 20 percent discount for quantities of 10 or more mailed at one time to one address.

REDUCES WEIGHT AND COST and Increases Safety Factor of High Pressure Christmas Tree Manifolds.

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HOUSTON

Squeaks from the Bull Wheel

Diplomatic

A young man was asked by a widow to guess her age. "You must have some idea," she said, as he hesitated.

"I have several ideas. The trouble is that I hesitate whether to make it ten years younger on account of your looks, or ten years older on account of your intelligence."

A Broad Hint

The recruit had the habit of partaking of his soup in a noisy and boisterous fashion. The noise was so loud that it upset the rest of the company. One day when the offensive sounds were at fortissimo, a veteran strode toward the culprit and said:

"May I help you?"

"Help?" echoed the recruit, "I don't need any help."

"Sorry, sir," said the veteran, "I thought perhaps you might wish to be dragged ashore."

One Thing at a Time

A lad had become the proud owner of a pig and insisted on having full care of it. After a few weeks, as the pig did not seem to thrive, his father said to him: "I'm afraid you're not feeding your pig enough. It doesn't seem to be fattening at all."

"I don't want to fatten him yet," said the young stockman, "I'm waiting until he gets as long as I want him, then I'll begin to widen him."

It Worked

He had taken a taxi, only to discover on approaching his destination that he was penniless. He had dined and wined too well. He caught up the speaking tube, shouted "Stop" and jumped out. "I just want to go in this drug store and get some matches," he explained. "I've dropped a $20 bill somewhere in the cab and can't find it in the dark." The cab vanished into the night, as he had anticipated.

Tails You Lose

A tourist returning to this country after a trip abroad was asked the usual question by the customs official: "Have you nothing to declare, madam?"

"No," she replied sweetly, "nothing."

"Then, madam," said the official, "am I to understand that the fur tail hanging below your coat is your own?"

A Liberal Interpretation

Justice Story, who was a member of the U. S. Supreme Court in the days of Chief Justice John Marshall, once described the sedate, well-ordered life of that great body in this fashion: "We take no part in Washington society. We dine once a year with the President, and that is all. On other days we dine together, and discuss at table the questions which are argued before us. We are great ascetics, and even deny ourselves wine except in wet weather."

Respecting the rule about wine, it sometimes happened that the Chief Justice would say to Justice Story, when the cloth was removed, "Brother Story, step to the window and see if it does not look like rain."

More often than not Story would report that the sun was shining brightly, and there would be no wine. On other occasions, however, Justice Marshall would reply, "All the better, for our jurisdiction extends over such a vast territory that, by the law of averages, it surely must be raining somewhere."

And he would call for the decanter.

Competition for the Ark

A dispute arose between Campbell and MacLean concerning the antiquity of their families. MacLean would not permit Campbell to claim a family tree as ancient as his own, contending that the history of his went back to the beginning of the world.

"What about the Flood?" asked Campbell.

"Pooh, you and your flood. My clan was before ta Flood."

"I have not read in the Bible of the name of MacLean going into Noah's Ark."

"Whoever heard of a MacLean that had not a boat of his own?"

Dangerous Literature

What happened to that booklet that came the other day on "How to Live to Be 100"?

I'm sorry, dear, but I decided to burn it before your mother got hold of it.

Science Is Wonderful

Doctor, if there's anything wrong with me, don't frighten me half to death by giving it a long scientific name. Just tell me what it is in plain English.

Well, sir, to be frank, you're just plain lazy.

Thank you, Doc.; now give me the scientific name for it. I've got to report to the Missus.

A Wise Guy, Eh!

This vase is over 2,000 years old, sir.

Oh, yeah. Don't try to pull that stuff over on me. Its only 1941 now.

Out Late, Too

"Why did the mouse gnaw a hole in the carpet?"

"He wanted to see the floor show."

Awful Stuff

Did the patient take the medicine I prescribed for him religiously as I ordered?

No, sir; he swore every time.

Distinction

Anyone on the next green, Caddie?

Yes, sir; there's a gentleman and his caddie, and a man carrying his own clubs.

Doctor Doesn't Always Know

"Doctor, my wife is sick. It's her appendix. You'd better come around and see her at once!"

"Give her some bicarbonate or ginger ale, and I'll look in tomorrow. She hasn't got appendicitis."

"I tell you she's got appendicitis."

"Well, she can't have! I took her appendix out three years ago, and I never heard of anyone having two appendices."

"Say, did you ever hear of anybody having two wives?"

"Pat, I'm afraid I shall have to charge another half dollar. You're such a big eater."

"For heaven's sake don't do that. I'm killin' myself already tryin' to eat what I'm payin' for now."

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NOTES FOR THE Equipment Buyer and User

Impact Wrench

INGERSOLL-RAND COMPANY

An air-operated impact wrench for use in applying and removing nuts up to 1¼-inch bolt size, designated Model 534, has been announced by Ingersoll-Rand Company, 11 Broadway, New York.

Designed with the Pott impact wrench principle to localize steel to steel impact without transmitting shock to other parts of the tool, the wrench has a small nose diameter and short over-all length to permit operation in close places. Reversing gears are not used. Balanced power with negligible torque reaction are provided for safe and convenient one-hand operation.

Recorder

GENERAL ELECTRIC COMPANY

A low-chart-speed recorder, designed to telescope 30-day load and voltage surveys formerly requiring 60-foot strip charts into a chart 30 inches long, has been announced by the Meter Division of General Electric Company, Schenectady, New York.

The instrument, an addition to the company's Type CF line of inkless recorders, has a chart speed of one inch per day, permitting the operating record for a month to be checked at a glance, and making the spread of current or voltage, as well as the duration of maximum and minimum values, immediately obvious.

The one-inch-per-day speed of the recorder is made possible by inkless recording mechanism which makes an impression by pressing the chart against a typewriter ribbon. The inkless feature obviates the freezing and evaporating difficulties in extreme temperatures, and the recorder is designed to function accurately in temperatures ranging from —10° to —120° F.

In setting up the recorder, date and time may be marked at the beginning of the record, and date and time of any other point can be found by counting each one-inch time line as a day.

Wire Rope Data Book

Combining essential wire rope data with catalog information on its products, the Macwhyte Company, Kenosha, Wisconsin, has issued its data book G-14, dated July, 1941, which is tabbed, sectioned and indexed in a manner to make readily available reference to any type of wire rope or any kind of service in which wire goods might be used.

Engineering tables combine with practical hints on wire rope handling and service to make the book equally valuable to the designer of wire-rope using equipment and to the man who in the field must get the most out of the lines under his charge.

Inquiries for the book should be addressed to the Macwhyte Company, Kenosha, Wisconsin, or to any distributor of Macwhyte products.

Clark Bros. Company Opens New West Coast Office

Clark Bros. Company, Olean, New York, announces opening of a new West Coast office, which will be in charge of A. K. Hegeman. The company for the past ten years has been represented on the West Coast by Smith-Booth-Usher Company of Los Angeles.

The new sales office and warehouse will be located at the plant of Pacific Pump Works, Bicket Street and Slauson Avenue, Huntington Park, California.

Art Rowe will be in charge of the service department and a complete stock of repairs will be carried.

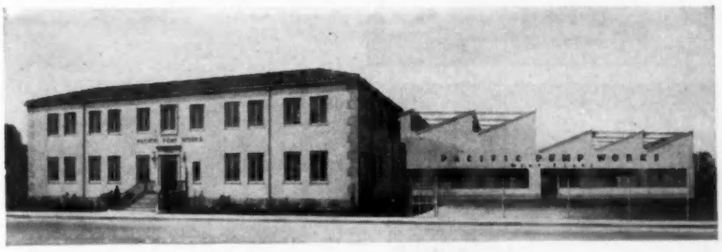
Chain Belt Company Makes Changes in Sales Department

A number of changes have just been announced by Chain Belt Company of Milwaukee.

W. B. Marshall, who has been assistant sales manager of the Conveying and Engineering Products Division of the company, has been made sales manager of that division. Mr. Marshall has been with the company since 1920. Besides being assistant sales manager, he has been in charge of the development and sales of sanitation equipment and has also had experience in field sales work. He graduated from Sheffield Scientic School of Yale University in 1921.

Another change brings B. E. Sivyer, former San Francisco branch manager, to Milwaukee as assistant sales manager of the Chain Belt and Transmission Division. Sivyer has been with the company 10 years and of that time spent 4½ years in San Francisco. He attended the University of Wisconsin.

Replacing Sivyer as branch manager at San Francisco is S. Y. Warner who joined Chain Belt Company in 1930,



Clark Bros. Company has opened a Western office quarter with Pacific Pump Works at Huntington Park, California.

WEIGHT INDICATOR POINTS
Based on percentage of sales, Martin-Decker spends *eight times* more money for research than the average corporation—large or small.
The reason is this: You can't expect modern drilling operations to be more efficient, more accurate, or more economical than the dependability of the instruments you use to control them. So Martin-Decker must constantly keep in step with drilling progress—building instruments to meet *every* control need.
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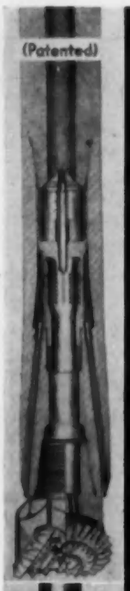

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the same year he graduated from Scheffield Scientific School of Yale University. Warner has recently been in the company's Los Angeles office and the California oil fields.

Exposition Scientific Committee to Meet at Tulsa August 22

Dr. Gustav Egloff, chairman of the International Petroleum Exposition's Scientific and Technical committee, has called a special meeting of that group for August 22 in Tulsa, to select subcommittees to plan Hall of Science displays for the 1942 show.

The exposition will be held May 16 to 23, with Hall of Science displays centering around the idea of "oil as a prime necessity in a national defense program."

Egloff will be assisted in planning the scientific exhibits by Dr. B. B. Weatherby, co-chairman of the committee.

Ohmite Manufacturing Company Completes New Factory Addition

Ohmite Manufacturing Company, manufacturers of rheostats, resistors, tap switches, and chokes, has recently completed an addition to the factory on West Flournoy Street in Chicago.

The enlarged plant, extending the frontage to several hundred feet, doubles the production space and greatly expands the company's facilities.

This current expansion is the second within a period of a few years.

Rotary

The National Supply Company, Toledo, Ohio, has issued Bulletin 299 on its Types MS-20½ and MS-27½ rotary machines. The units are heavy-duty, fully enclosed oil-bath tables rated for speeds up to 350 revolutions per minute at any depth. Type MS-20½ has a table opening of 20½ inches, designed to run 18⅝-inch API casing or smaller, and Type MS-27½ has a table opening of 27½ inches, designed to accommodate the largest size API casing and couplings.

Circuit Breakers

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pennsylvania, has issued Bulletin 33-216, giving 8 pages descriptive of oil circuit breakers of 25,000 kva interrupting capacity for indoor service. The breakers are for lines up to 600 amperes, 7500 volts, and 800 amperes, 5000 volts. Illustrations show positions of all important parts, and tabulated data include capacity and tripping ratings, shipping weights, accessories and style numbers.

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STANDCO BRAKE LINING
nothing novel—no bunk—but it gets the job done without scoring brake rims. See page 2342 Composite Catalog.
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